

## RECENTLY PATENTED INVENTIONS.

## Electrical Devices.

**ELECTRIC AUTOMATIC GAS LIGHTER AND SHUT-OFF.**—H. J. LYONS, Guyandotte, W. Va. This invention relates to an electric automatic gas lighter and shut-off, Mr. Lyon's main object being to provide for igniting a plurality of burners stationed at different points and to provide for automatically shutting off the gas, so as to prevent the gas being turned on again under conditions of danger. The small motor in this contrivance may be made with permanent magnets so as to reduce the cost of the batteries to a minimum. An independent circuit can be added for the separate lighting of individual burners.

**SPHEROIDAL STRAIN.**—L. STEINBERGER, New York, N. Y. The invention relates to electrical strains, the inventor's more particular object being to produce a neat, compact, and efficient device capable of being used either with or without the outer envelope or insulation. The device is one very easily handled in machine shops, for the reason that the link can be either drop-forged or cast from malleable iron.

**SINGLE-LINK STRAIN.**—L. STEINBERGER, New York, N. Y. This improvement belongs to insulated electrical strains used for outdoor wiring, and more particularly to the production of a strain embodying a high degree of simplicity, neatness, cheapness, and general efficiency. It further relates to the production of a strain in which there is virtually but a single "metallic link."

**SUSPENSION-FIXTURE.**—L. STEINBERGER, New York, N. Y. The invention in this patent has reference to a suspension-fixture to be used in overhead-line construction for electric railways, and more particularly as a device capable of serving as a turnbuckle, a strain, and a clip support; and the object of the inventor is to produce a device capable of serving in one or more of the capacities mentioned.

## Engineering Improvements.

**SUCTION-VALVE FOR COMPRESSORS.**—E. A. MENKING, Pittsburg, Pa. The present invention pertains more especially to spring-controlled puppet or suction valves, such as are employed in connection with cylinders of air, gas, or other compressors or the like; and the principal object is to provide a valve structure of this character which is effective in operation and which may also be regulated with facility, whereby no hammering or noises are produced by the valve when the same is in use.

**RANGE-FINDER.**—G. GRIFFITH, San Francisco, Cal. The object in view of the invention is to furnish a new and improved range-finder for the use of surveyors, marine officers, and other persons and arranged to indicate the distance of an object from the observer located on land or sea without requiring calculations.

**PIPE.**—O. BERGER, Galveston, Texas. Stated broadly, this invention consists of arranging the fluid or gas conducting pipe within a larger pipe and special means whereby the inner pipe is concentrically supported, providing uniform surrounding space between it and the outer pipe, adapted to receive insulating-packing, or for effective flow of cold fluid around the inner pipe, according to whether its contents are to be cooled or heated.

**EXPLOSIVE-ENGINE.**—W. WATKINS, Joplin, Mo. Mr. Watkins' invention has reference to improvements in explosive-engines of the two-cycle class, the engines being adapted for service in either a horizontal or a vertical position. The engine has its parts arranged for operation in a manner to minimize the vibration of the structure, thus especially adapting it for service on motor driven vehicles.

**MOTOR.**—J. W. GARRETT, New York, N. Y. The inventor's improvement in this patent refers particularly to that class of motors known as "gas" or "explosive" motors, his object being to provide a simple and inexpensive means for converting a steam or similar pressure engine of the ordinary slide-valve type into a gas-motor of high power.

**BOILER-SETTING.**—S. W. DAVIS, Pickens, W. Va. In this case the invention resides in a manner of constructing walls adapted especially for covering or setting boilers, although it is applicable to various other purposes, as will suggest themselves to skilled mechanics—for example, it could be used in wall construction in the art of house-building.

## Hardware.

**PERMUTATION-LOCK.**—R. L. BENTON and W. R. BENTON, Salda, Col. The object claimed in this invention is the provision of simple novel details of construction for a lock that adapt it for reliable service to secure a door in closed adjustment, dispense with a key, and which is devoid of accessible openings, thus preventing the use of explosives for destroying the lock when it is in locked condition.

## Heating Apparatus.

**FIRE-BOX FOR FIREPLACES.**—J. J. M. LANGE, Svendborg, Denmark. The design in this invention is to retain the advantages and avoid the drawbacks in well-known types of slow-combustion stoves. This result is obtained by the fact that the improved fireplace, in

which the combustion takes place from above downward, comprises a container for the fuel, having openings for the introduction thereof and for the passage of air, and in which container the remaining embers can by means of a turning movement be pushed upward and spread out over the fresh fuel.

## Machines and Mechanical Devices.

**HOIST, RAISED TRACK, AND DUMPING DEVICE.**—W. R. STRICKLER, Jewell, Kan. The object of this device for loading hay, grain, and other materials into barns or other buildings and places, is to provide an improved horse-power hoisting device, very effective and automatic in operation, and arranged to utilize the power applied to the fullest advantage, and to automatically trip off a load and cause return of the load-carrier to the starting position.

**ICE-MAKING MACHINE.**—R. F. LEARNED, Natchez, Miss. The improvement relates to machines of that class wherein water is frozen into blocks of ice in suitable cans; and relates more particularly to apparatus wherein air or gas is admitted to the water during the freezing operation in order to deaerate the water and to produce a solid and practically coreless block of commercial ice. Such an apparatus is disclosed by a prior application for a patent by Mr. Learned.

**APPARATUS FOR RAISING LIQUIDS FROM WELLS.**—T. F. MORAN, De Young, and F. J. MOSER, Kane, Pa. The invention relates to apparatus for raising liquids from wells, and more particularly to apparatus of the kind used in the oil regions for raising liquids, such as oil and water, from oil-wells. It also relates to mechanism for cleaning the sand and other impurities from the well, and also to render the main valve, used in the bottom of the well, more readily accessible.

**WORD-COUNTING ATTACHMENT FOR TYPE-WRITERS.**—J. G. COLEMAN and L. WILHITE, Cleburne, Texas. The present invention relates to improvements in word-counting or registering attachments for type-writing machines, the object being to provide a device for this purpose of simple construction that may be readily attached to the machine and by means of which the number of words printed will be accurately indicated.

**SPOOL-CUTTING LATHE.**—G. A. ENSIGN, Defiance, Ohio. Mr. Ensign's invention has reference to woodworking machinery; and the inventor's object is to provide a new and improved spool-cutting lathe more especially designed to finish roughened-out spools in a very simple manner, rendering the spools uniform in shape and finish and allowing the finishing of spools of different shapes and sizes.

**WAVE-MOTOR.**—J. C. HERGENHAN and C. C. VON DER AHE, New York, N. Y. This patent the invention relates to certain novel and useful improvements in the construction of an apparatus designed to utilize motion imparted by waves. The object is the provision of a mechanism which may be readily assembled upon a hull or float of the desired character and which shall be so constructed that it shall be positive in its operation and simple in construction.

**MECHANICAL MOVEMENT.**—J. H. HUSSEY, Spokane, Wash. Broadly stated, this invention comprises mechanism interposed between the driving power and the work it operates upon whereby the power derived from a reciprocating motor is evenly delivered to the work. Taking for illustration the commonest form of motor now in use, the steam-engine, it is well known that the power derived therefrom is delivered with constant variation, according to the position of the crank-shaft of the engine, position of the piston, etc.

## Of Interest to Farmers.

**MACHINE FOR LOADING AND STACKING HAY OR THE LIKE.**—S. MITSCH, Woodbine, Kan. One of the principal objects of the improvement is to provide means whereby hay, grain, or the like may be loaded upon the machine while the latter is in motion, and also to furnish means whereby the elevation of the load is effected during the movement of the apparatus toward the stack.

**SACK-SCALE.**—G. A. ARCHAMBAULT, Clare, Mich. Comprised in this improvement is a supporting-frame which is capable of adjustable attachment to a bin, wagon, or the like, and which carries a scale-beam. To the beam is attached the bag-holding device. By means of this invention grain may be shoveled readily into the bag and at the same time weighed, after which the bag may be tied and a second filled, the work being carried on quickly and conveniently.

**PLOW.**—J. N. HATCHER, Mokane, Mo. The purpose in view in this improvement is the provision of a plow that may be readily changed to form either a sulky or walking plow, as may be desired, and, further, to provide, in connection with the plow, a soil-cutting or turning disk or moldboard so attached that it may be swung to operate on either side of the plow.

## Of Mining Interest.

**SHEET-METAL CLAMPING-BAND WITH INCLINED LOOSE DISPLACEABLE JOINT FOR PIPE-UNIONS.**—E. WIRTZ, Schalke, Germany. This invention has relation to certain

novel and useful improvements in a device for uniting cylindrical pipes, and in particular to thin-walled pipes and butt-joints—such as are used for air-conduits in mines and for other places. This clamping-band for pipes can be manufactured in great quantities at comparatively little expense.

**BUMPING-SCREEN.**—H. L. KING, Denver, Col. This is a screen for classifying and sizing ores in milling. The invention includes, in connection with a supporting frame, screen-hangers located below the weight of a screen-body and so disposed relatively to the main frame and the screen whereby a vertical rolling movement of the screen is effected simultaneously with the longitudinal movement or thrust thereof.

**TREATMENT OF ORES CONTAINING GOLD, SILVER, COPPER, NICKEL, AND ZINC.**—H. HIRSCHING, San Francisco, Cal. This is a process whereby the metals of complex and refractory ores and tailings can be extracted, and more especially gold, silver, copper, nickel, and zinc can be produced separately and economically. The process is a continuous hydrometallurgical process, using as a solvent water, ammonia, and compounds thereof, and is carried on in a simple apparatus for which a separate application has been filed by Mr. Hirsching.

## Pertaining to Vehicles.

**VEHICLE FRAME AND DRIVING AXLE GEAR.**—GEORGE R. BOULDING, Wells, Nev. Mr. Boulding's invention provides means of connecting the front as well as the rear axle of an automobile to the driving motor. This is permitted by the use of an improved type of swivel hub whereby the wheels may be steered independently of the front axle, and the outer wheel may turn faster than the inner one in turning a curve. The frame of the vehicle is so constructed that the vehicle will ride easily over an uneven road with all four wheels continuously in contact with the ground.

**REACH OR COUPLING-POLE FOR VEHICLES.**—J. PREUITT and C. W. F. GLANDER, Wahpeton, N. D. The principal object of this invention is the provision of a reach or coupling-pole for wagons and similar vehicles which is extensible as to length, whereby the same may be adapted to vehicles in which variations may exist in the relative distance between the axles thereof or between the rearward axle and the usual bolster above the forward axle of the vehicle.

**SPROCKET-TOOTH.**—R. O. WIGLEY, Brewton, Ala. In the present case the improvement consists in making the central tongue of a sprocket detachable from the fork portion and securing it within a socket of the fork portion by the same bolt which fastens the sprocket to the wheel. By this construction a great saving in sprockets is made, for as the pulling strain and wear come only on the central tongue it is only necessary to renew the tongue or to take it out and turn it around without having to cast away or change the position of the entire sprocket.

## Railways and Their Accessories.

**METALLIC RAILROAD-TIE.**—J. K. THOMA, Cooperstown, N. Y. The purpose of this invention is to provide a metallic tie for railroads so constructed that rails of any description will be firmly held in place and the locking device for the rails utilized not only to hold the rails upon the ties, but also to anchor the ties and to prevent the ties and rails from creeping or moving from their set position.

**CAR-DOOR.**—F. L. MONSON, Christine, N. D. In this patent of Mr. Monson the invention has reference particularly to doors for grain-cars, and the object of the improvement is to provide a metal door of very light material, and therefore easy to handle or operate, and, further, to provide means to make the door grain-tight.

**DERAILER.**—M. P. LAYTON and J. W. VAN DOREN, Minonk, Ill. In this case the invention relates to a device for running railway rolling-stock from the rails. It is applicable in various connections, particularly on sidings or switches, so as to prevent the cars on the switch from being run back accidentally onto the main track. The entire action of the derailer is automatic.

## Miscellaneous.

**HALTER.**—J. G. LEWIS, Fairfield, Neb. Mr. Lewis has invented an improvement relating to halters, which is a simple, neat, and efficient device composed entirely of two pieces of rope and readily adjustable to the heads of different-sized horses. His device also allows considerable freedom to the jaws of the animal, and it can be operated by a farm hand of ordinary intelligence.

**REMINDER.**—V. STERKI, New Philadelphia, Ohio. This contrivance is an instrument for reminding persons of business engagements and other events desirable to be borne in mind. The device is equally serviceable for business men, doctors, lawyers, ministers, teachers, statesmen, and politicians. It may be advantageously used in the home, especially by people having many social duties.

**FOLDING AND CREASING DEVICE.**—H. R. PLIMPTON, 2d, Newton Center, Mass. The

purpose of this inventor is to provide means used in connection with a circular or other form of base for folding and creasing balloons, bindings, tapes, and ribbons of paper and other material through the medium of which means the material may be taken from the base in either a folded or creased condition or in its usual flat condition.

**PERMANENT HAT-PIN AND LOCKING ATTACHMENT.**—C. C. G. WOLPERS, New York, N. Y. The intention of this improvement is to provide a pin which while removable from the hat is adapted to remain as long as the hat is in continued use or even thereafter and to provide the pin with one or more comb-sections removably applied thereto adapted to enter and take up such a binding engagement with the hair when the hat is placed upon the head and the pin is properly turned as to hold the hat in place.

**CONDUIT OR CULVERT.**—L. LANE, Toledo, Ohio. In carrying out this invention Mr. Lane has particularly in view a structure, the parts of which may be readily shipped from point to point in sections or detached portions and may be quickly and easily assembled and bound or held in such assembled position through the medium of his improved devices.

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