

RECENTLY PATENTED INVENTIONS.

Pertaining to Apparel.

TAILOR'S SQUARE.—J. A. CARLSTROM, New York, N. Y. The invention relates to drafting and measuring instruments, and its purpose is to provide a square arranged for conveniently obtaining any division of any breast size in drafting garments, without requiring calculation on the part of the tailor, and thus reducing the making of mistakes and errors in drafting to a minimum.

SHOE-CALK.—M. M. SCHANEY, Dubois, Pa. In this invention the improvement is in ice creepers and it has for an object to provide a novel construction built mostly inside of the heel of boots or shoes and including spikes or calks arranged to be projected or retracted by means of cams on a sliding operating rod.

SHOULDER-BRACE.—L. C. ACCOLA, Brush, Colo. The object of this inventor is to provide a brace with few parts, which can be adjusted readily and which will not cause the wearer any inconvenience. Curved metal springs are provided to hold the shoulders back in place without confining or restricting the movements of the body, as is done with ordinary braces which are in the nature of bandages.

Electrical Devices.

INCANDESCENT-LAMP CLUSTER.—F. SCHWARTZ and L. KLEINMANN, New York, N. Y. In the present patent the invention has reference to electric lighting, and the object of the improvement is the production of an electric light fixture having a cluster of lamps or lights constructed and arranged in such a way that the lights may be turned on in groups of one, two, three, or four lights, etc.

POLARIZED RELAY.—P. RIBBE, Halensee, near Berlin, Germany. The invention relates to a relay which can be operated by currents or impulses of a very low pressure, such as from 10⁻⁵ amperes to 10⁻¹⁰ amperes and even less. It may be arranged either to momentarily close a secondary circuit or to control effects of light. As many consecutive impulses as from one hundred to several thousands per second can be permitted to circulate in the primary circuit for causing the relay to produce a corresponding number of secondary effects per second.

DYNAMO-VENTILATOR.—D. R. MCCULLOUGH, Pocatello, Idaho. In the present patent the improvement has reference to means enveloping the dynamic elements of an electric generator or motor, for confining and restricting the ventilation of the machine to the parts to be ventilated, and to means for effecting an interchange of air through said parts.

LEVER-CHECK FOR ELECTRIC CONTROLLERS.—J. THOMAS, New York, N. Y. The lever will operate so as to prevent its being suddenly rotated in a direction which will throw the full strength of the current. The device operates so that while it does not prevent the lever from being moved into the position which will turn the current on, it does not prevent its being swung to that position by a single continuous advancing movement. Even if the controller lever is in the hand of an unskilled motorman, it will be impossible for him to turn the current on suddenly, to the injury of the motor.

MANUFACTURE OF SENSITIVE CELLS.—P. RIBBE, Halensee, near Berlin, Germany. In this new method fine parallel metallic conductors are produced in the shape of hair-lines, so that after covering them with a fine layer of selenium or the like a cell sensitive to light is obtained superior to ordinary selenium cells in efficiency and sensitiveness. By this new method the maximum sensitiveness of the cell is obtained.

LIGHTNING-ARRESTER OR LINE-DISCONNECTOR.—J. W. PEDIGO, Chariton, Iowa. The invention relates more particularly to arresters employed in connection with a telephone or other delicate instrument, susceptible to injury from the overcharging of its circuit. An object is to provide a device in which a double disconnection is effected by one movement.

Of Interest to Farmers.

GANG-PLOW.—A. MECHAM, Edinburg, N. D. The object here is to provide details for a plow, which adapt the series of individual plows forming a gang and that are arranged laterally in sequence to automatically adjust themselves to conform to the undulations of the soil; and to so construct the attachment between each individual plow beam and the main frame beam, that the connection will automatically release a plow that is held from progress by an obstruction in or on the soil traversed by the gang plow.

BROODER.—G. H. LEE, Omaha, Neb. This brooder will not require other heat than that developed by the bodies of the chicks within the brooder. An object is to produce a brooder for this general purpose, having a special construction which will tend to conserve the heat from the bodies of the chicks, and which will provide for the ventilation without danger of crowding.

ATTACHMENT FOR THRESHING-MACHINES.—C. O. FREDRICKSON, Osceola, Neb. The object of the inventor is to provide a member which forms a continuation of the concave of a threshing machine, the member

being formed of slots which are arranged longitudinally of the machine and which assist in separating the grain from the straw, without impeding the movements of the straw through the machine.

MOTOR-PLOW.—A. E. COOK, Odebolt, Iowa. The invention relates to a form in which the side thrust of one tool or gang of tools is resisted not by an opposing tool or gang of tools, but by means of a device which operates somewhat like the landside of a common plow. This device is in the form of one or more disks which enter the earth and are adjustable to facilitate steering the plow. It may, however, assume various other forms, such as that of a continuous runner or plate which enters the earth to prevent lateral motion after the manner of a keel of a marine vessel.

DRAFT MECHANISM.—H. MESSMAN, Jefferson Township, Ind. By means of this mechanism four horses may be attached to a plow in such a way that none of the horses will be obliged to step in the soft plowed ground. In other words the mechanism affords means for attaching the horses in a laterally displaced position toward the land.

MOWING-MACHINE.—A. M. LEONI, Highland, N. Y. An arrangement is provided whereby the mower bar or cutter may be driven independently of the speed of advance of the implement. The mechanism transmits the driving force to the cutter bar, which will operate in such a way as to prevent injury to the teeth of the cutter when obstructions such as stones and the like become caught in the teeth. It operates automatically to throw the driving mechanism out of operation, thus preventing accidents to the cutter bar and other parts. Mr. Leoni has invented another mowing machine. He drives the mower bar by means of a gasoline engine, and employs a special transmission device which operates in such a way that if obstructions come between the teeth of the cutter, the ignition circuit connected with the spark plug will be opened so as to stop the engine. The mower bar is driven from the engine through a clutch, and he provides automatic means for opening this clutch when the mower bar is raised.

Of General Interest.

PICTURE-FRAME.—J. B. WEBER, Union Hill, N. J. In this case the invention has reference to picture frames, and the object of the inventor is the production of a light and simple frame for a picture or a card, which will hold the card against warping, and which will give the picture or card an ornamental appearance.

FILING CABINET.—H. L. SQUIRES, Morgan City, La. The construction in this instance embodies a plurality of similar box-like receptacles, permits inspection of the interior of the receptacles while closed, through a glazed front wall on each receptacle, permits each receptacle to be rocked into opened condition affording access to its contents, and provides an alarm that will be sounded when any receptacle is opened.

MEANS FOR SECURING PARTS OF FURNITURE TOGETHER.—P. SCOTTE, Lansing, Kan. One purpose here is to provide means for assembling portions of an article of furniture, which will compensate for variations in the thickness of different parts that are assembled, due to warpage or shrinkage. The invention dispenses with the use of screws, nails or pins and with the necessity of using tools in the erection of an article of furniture, which has previously been completed and knocked down so as to separate its members for transportation.

SHUTTER ATTACHMENT.—C. MAECHLER, New York, N. Y. Mr. Maechler's invention refers to shutter attachments suitable for use upon windows and the like, his more particular object being to provide for the leaves of the shutter a comparatively high degree of adjustability, and also to enable the leaves to be held rigidly in position when once adjusted.

METAL DOOR.—A. C. GODDARD, New York, N. Y. This improvement provides a door made in its main parts of sheet metal, the parts being fastened or locked together to render the door exceedingly strong and capable of withstanding a high heat in case of fire, and means for fastening the parts together being invisible, thus rendering the door exceedingly ornamental.

WATERPROOF CEMENT.—M. M. SMITH, Fredonia, Kan. This process is for use in the manufacture of white waterproof cement of a kind suitable for the making of articles of stone, or for other uses where a white waterproof cement is desirable. The object of the invention is to provide a method by which an ordinary cement composed of varying proportions, can be whitened and waterproofed after being burned to a clinker.

APPARATUS FOR FORMING HEAD-STONES FROM PLASTIC MATERIAL.—C. C. WINGO, Baltimore, Md. The primary object of the inventor is to provide a substitute for marble head-stones or tomb-stones, and for wall tablets, or inscription plates, etc. To this end he forms the same from hydraulic cement, which, as is well known, becomes exceedingly hard and is practically indestructible.

LETTER AND PARCEL HOLDER.—M. C. LONG, Newton Township, Iowa. This device facilitates the work of mail clerks and saves twine. A plate is laid on the package to be

secured with the disk upward, and at approximately the longitudinal center of the package. The string is then brought upwardly around the package and between the spring and the disk, and thence at right angles around the package in a transverse direction, and encircling the disk twice, passing between the spring portion and the disk each time.

BOAT.—G. WHITE, Ashtabula, Ohio. The invention has for its aim the provision of a boat with a series of hydroplanes which are spaced apart and are pivoted to the bottom of the boat, there being means provided to hold the hydroplanes in operative position. Another object is to provide an improved form of hydroplanes.

HORSESHOE.—W. O'BRIEN, Woodland, Cal. The improvement comprises a body portion, a rib depending from the inner edge of the body portion, the latter extending laterally downward beyond the rib's outer face and such extension perforated for nails, and the inner face of the rib being curved from end to end in cross section on curved lines with a pitch increasing toward the heels and the outer face of the rib and forming an edge extending approximately throughout the length of the rib.

ADVERTISING DEVICE.—J. R. WARREN and G. W. PACEARD, JR., Deadwood, S. D. The improvement relates to devices or signs using the tumbling panels known as "Jacob's ladder," and its object is to provide a device arranged to allow viewing the signs from both sides and to display four different legends on each sign, thus increasing the capacity of the device without increasing the bulk.

INTERCHANGEABLE LOCKING-BORDER.—J. S. VOORHEES, New York, N. Y. The border is arranged to readily connect the border pieces with each other, and to securely hold the same in place, to allow of conveniently interchanging and connecting border pieces of different length, for forming narrow or wide borders for columns of different width and for long or short matter to be inclosed by the border, the arrangement also serving to allow the set up type and its border to be set aside for future use without requiring tying of the border by the use of cords, bands or the like.

CORE-ARBOR.—I. H. LONG and S. A. MILLIGAN, Louisville, Ky. The invention relates to the manufacture of cast iron pipes having integral branches. The arbor is for use in green sand or sharp sand cores, and arranged to permit of securely interlocking the branch with the main core arbor, without danger from the branch core sagging or becoming loose, and to allow quick unlocking of the branch core arbor and removing the cores from the pipe after the casting operation is completed.

PROCESS FOR RENDERING MATERIAL OF ANY KIND PROOF AGAINST THE ACTION OF MOISTURE AND OF CHEMICAL AGENTS.—A. KRONSTEIN, 95 Kreisstrasse, Karlsruhe, Germany. Mr. Kronstein's process is based upon the property of certain organic bodies to form solid substances at an elevated temperature, which are insoluble in the ordinary solvents, and are not attacked by the action of acids or of dilute alkalis even at the elevated temperature of 270 deg. centigrade.

DOOR-HANGER.—H. FABIAN, New York, N. Y. An object in this case is to provide a hanger for doors, sliding windows or similar objects, by means of which the door or window is supported so that it can be opened or closed with little friction, and requires but a slight expenditure of effort to operate it, and in which the hammer occupies comparatively little space.

GUY-ROPE CABLE CLAMP.—L. H. KNAPP, Syracuse, N. Y. At the ends of guy wires or cables, such as used for staying telegraph poles, stacks, etc., it is necessary to form loops by means of which the guy wires or ropes are secured in position. The object here is to provide a clamp of simple construction which can be quickly applied to clamp the main part of the cable to the end of the loop.

Hardware.

TACK-PULLER.—J. S. SWAN, JR., Mount Vernon, N. Y. The improvement relates to tack pullers in connection with tool handles, and in all analogous relations where it can be used for pulling tacks, the special purpose being to mount the puller upon such a portion of a handle as will render the puller effective for many purposes, and at the same time strengthen the handle.

LOCKING DEVICE FOR NUTS AND THE LIKE.—C. E. RANCILLAZ, Colombes, France. The object of the invention is to produce a construction serving the purpose of locking nuts and the like, by permanently fixing the nut to the intermediate washer before placing in position to avoid the risk of losing this part and to effect automatically the deformation which insures the fixing of the nut without using tools or other external means.

WISE.—J. E. BASHORE and C. W. JENSEN, Tippecanoe City, Ohio. The invention has for its purpose the production of a vise in which a movable jaw may be quickly adjusted by hand toward or from a fixed jaw, according to the thickness of the work to be grasped, and then secured and caused to move

slightly toward the fixed jaw by the turning of a handle bar or lever.

LOCK.—M. NADOLSKI, Jersey City, N. J. The aim in this case is to produce a lock of simple construction which will operate in a simple manner without the use of a spring. The inventor contemplates a construction by means of which the bolt is positively held against withdrawal when in its locked position.

COMBINED JOINTER AND RAKER.—J. V. CLOSE, Rowayton, Conn. In this single tool the opposite ends are adapted for bricklayers' uses. The parts which engage with the mortar are detachable from the body of the tool, so that different parts having a different shape and size may be substituted in place thereof. The part used for jointing or pointing constitutes the handle for the tool while it is being used for raking.

Heating and Lighting.

HEATING APPARATUS.—N. M. EDDY, Alpena, Mich. The purpose of the present invention is to provide an apparatus arranged to return the water of condensation from air piping to the boiler and to render the action entirely automatic, without requiring readjustment of the parts at any time. It relates to apparatus such as shown and described in the Letters Patent of the U. S., formerly granted to Mr. Eddy.

WICK-TRIMMER.—W. J. LEE, Arcadia, Mo. In the present patent the invention is an improvement in wick trimmers, and has for its purpose the provision of a novel construction whereby the wicks may be trimmed from without the burner into the desired curved form in order to secure the proper shape of flames.

HEATING APPARATUS.—A. ZECK and F. VAN ZECK, Grafton, W. Va. This invention is such as shown and described in Letters Patent of the U. S. formerly granted to these inventors. The object is to provide an apparatus in which steam and hot water heating are combined in a very simple and effective manner. No sudden change of the temperature of the water in the radiator takes place, as the same water level in the radiator is maintained and the temperature is raised evenly and rapidly.

ACETYLENE-GAS GENERATOR.—T. S. TOWLE, Stanton, Mich. The invention refers to carbide holders employed in the generation of a volume of acetylene gas as a motive agent for portable engines, and more particularly for automobile vehicles. The holder affords a compact, convenient device which is positive in its action for the removal of spent residuum and the constant exposure of fresh carbide to water jets, thus insuring a uniform generation of gas supply as a motive agent.

AUTOMATIC FIRE-KINDLER.—J. C. ST. CLAIR, Butte, Mont. The improvement has in view the provision of a kindler adapted to automatically operate at any predetermined time to start a fire. The invention is more especially designed for cooking ranges. It, however, can be applied to other types of stoves, as well as to open fireplaces, and operate with equal effectiveness.

Household Utilities.

FLAT-IRON STAND.—W. L. HEADLY, Colwyn, Pa. In this invention the intention is to provide a simple, inexpensive, and serviceable stand for irons or the like, which has a bracket for removably securing it to the top of a table or the like, and obviates the danger of the stand with the iron thereon being knocked off or turned over.

FOOT-REST.—J. A. GAERTNER, Baltimore, Md. The invention is especially adapted for use with a rocking chair in that it permits a person using the chair to rock while his feet are supported upon the rest, the latter having a swinging motion in unison with the movement of the chair. It is composed of few operating parts and therefore is not likely to get out of order.

FUEL-ECONOMIZER.—F. W. CONNEY, Wyoming, Iowa. The device may be set close to a heating or cooking stove, being practically out of the way. Means provide for connecting the device directly to the smoke conductor or outlets, and for causing the heated products of combustion to take a downward course through a series of conductors, and then up through a main conductor to a flue.

DETACHABLE HANDLE FOR FRYING-PANS AND OTHER CULINARY VESSELS.—D. T. ABERCROMBIE, Newark, N. J. The intention of the improvement is to provide a handle for frying pans and other culinary vessels, arranged to permit of securely attaching the handle to the vessel when using the latter for its legitimate purposes, and to allow quick removal of the handle from the vessel for convenient shipping and storing.

CHAIR ATTACHMENT.—D. S. CURTISS, Seattle, Wash. The invention relates to furniture, and its object is to provide a rocking attachment and foot rest for use on ordinary chairs and rocking chairs and arranged to permit the user to conveniently tilt the chair back to a desired position, thus insuring comfort to the occupant.

FOLDING TABLE.—A. HUMMEL, New York, N. Y. In this patent the invention relates to folding tables, Mr. Hummel's more

particular purpose being to provide a type of such table in which there are a number of leaves connected together at all times and adapted to fold and unfold for the purpose of extending or reducing the length or width of the table.

IRONING-BOARD.—O. W. MIMS, Dardanelle, Ark. The board can be supported from the wall at right angles thereto, it being possible to change the angularity. Means are provided whereby the board can be quickly and conveniently installed in any room and readily removed from its support, and wherein when the board is connected with a support and is not needed, it can be made to stand parallel with and close to its support.

POWDER-PUFF.—P. E. PAGE, Asheville, N. C. This powder puff is very compact in construction and is arranged to permit of convenient application or storing in a receptacle to retain the puff and the powder therein in good condition for a long time, and to allow of conveniently carrying the receptacle and puff therein around in a pocket, hand bag or other carrier.

Machines and Mechanical Devices.

TRANSMISSION-GEARING.—E. E. LARSON, Thompson, Iowa. The more particular purpose here is to produce a type of gearing in which the power is transmitted through gears acting upon a revoluble member, this member being retarded to a greater or lesser extent by aid of friction gears, the degree of retardation governing the positiveness of the drive, and also controlling the speed of the driven element as compared with that of the driving element.

MACHINE-TOOL.—B. FRANZ, 20 Giesserstrasse, Leipzig-Plagwitz, Germany. The invention relates to tools in which the feed or re-setting of the work or of the tools for the next operation is effected automatically. An object is to cause the feed or re-setting to take place on the one hand during the return movement, and on the other hand directly by means of the mechanism producing the return, so that a special dividing device is unnecessary.

LINE-CUTTER.—J. J. DAVIN, Washington, Pa. This cutter is for use in wells and borings. It is adapted to be slidably arranged on a drill controlling line, and having cutting means for engaging a line at any desired point to sever it. It is also adapted to be slidably arranged on a drill line and has cutting means for severing the line at any desired point, the cutting mechanism being operable by an upward pull on the cutter.

CIRCULATING SYSTEM.—T. E. WARREN, Ticonderoga, N. Y. The object here is to provide a system, more especially designed for circulating fibrous stock, such as sulfate pulp, wood pulp, soda pulp, and the like from a stock chest to beaters and other machines, and arranged to require comparatively little power to circulate the stock through the line and to prevent the water from leaking out of the stock and thus prevent the same from hardening in the pipe line.

TIDE-MOTOR.—W. J. WHITE, Oyster Bay, N. Y. This invention relates to motors adapted to be operated by the rising and falling of a water level. On the rising of the level the motor is operated by the buoyancy of the float, and on the downward movement it is operated by gravity. It can also be used wherever there is a rising or falling of the water level from any cause whatever.

POWER-TRANSMISSION MECHANISM.—F. E. SEDDON, Hoboken, and W. H. DOUGLAS, Belleville, N. J. This mechanism is for use on automobiles and other vehicles and mechanisms requiring a varying and differential action in either direction and arranged to allow forward or backward driving of any desired speed without reversing or changing the speed of the motor, and to permit the driven wheels to run at a differential speed when the vehicle turns around a corner or in a sinuous track.

PORTABLE TURNING-LATHE.—W. D. VERSCHOYLE, Tanrago, Ballisodare, Ireland. The principal object here is to provide a tool which will be little heavier and will occupy little more room than an ordinary drilling brace and which, when required for use, can be assembled and clamped to any convenient support, or can in various situations be employed instead of a brace for boring holes with accuracy and dispatch, while the parts can be quickly taken asunder and carried in an ordinary tool basket.

FEEDER FOR GRINDERS.—R. J. STEEN, Canyon, Texas. The invention involves a new attachment for use within the hopper of crushers or grinders, and the object is to facilitate the feeding of the material to the grinding or crushing mechanism. It is applicable to any form of grinder having a hopper, but it is especially applicable to grinders and crushers for grain.

SPOOL-HOLDER.—F. MAYOR, New York, N. Y. A holder is provided adapted to be applied to the machine either vertically or horizontally, the same embodying two heads arranged at the opposite ends of a cushioned stem, one head being permanently attached to the stem and provided with a number of spool-supporting pins, and the other detachably applied to the stem and secured thereto by a novel lock.

WATER-METER.—C. LOXY, New Windsor, and C. A. LOXY, Fort Collins, Colo. The fact is made use of in this invention that there is

a definite relation between the rate of discharge and the varying depth of the water, this rate of discharge being different in different instances, yet capable of being calculated from measurements or appropriate weir formulae.

CAN-STRAIGHTENER.—T. H. HART, Everett, Mass. The purpose in this instance is the provision of a supporting former provided with surfaces arranged at an angle to each other adapted to respectively engage in the inside of the breast and body of the can, and a pivoted compressing former having corresponding surfaces for engaging the outside of the breast and body opposite the supporting former.

DITCHING-MACHINE.—E. J. SCHRAMKE, Saginaw West Side, Mich. In this machine a wheeled truck is mounted on a wagon, so that the truck can travel on the wagon. The wheeled truck carries a motor and at its front has a reciprocating frame carrying cutters at the under side and has a belt elevator for the dirt. The motor serves to reciprocate the frame and cut the ditch as the truck moves rearwardly on the wagon. The wagon serves to shift the whole apparatus to a new position.

COIN PACKAGING AND COUNTING MACHINE.—A. SERENA, New York, N. Y. This machine is for use in facilitating the forming of packages or cartridges of coins of different dimensions. These packages are simply small cylinders of paper which are of sufficiently large diameter to receive the coins laid side by side. When the package is filled its ends are simply folded over the coins at the outer ends so as to form a compact package of the coins.

ACTUATING MECHANISM FOR PRINTING-PRESS THROW-OFFS.—J. SPRINGER, San Francisco, Cal. The invention is an improvement in the actuating mechanism for printing-press throw-offs, and has for its object to dispense with the conventional hand-operated lever for this purpose and provide a treadle as a substitute, whereby the operator may have the free use of both hands for feeding the press.

ABRADING-MACHINE.—J. MILNE, JR., Cleveland, Tenn. This machine will sandpaper and smooth wood and other like materials. Means provide for increasing or decreasing the pressure of the abrasive members, thereby regulating their action on the material which is being worked. Means also provide for new abrasive surfaces being brought into operative position.

FLOOR-SCRAPING MACHINE.—R. S. LA RUE, Bellefontaine, Ohio. The invention pertains to machines used for leveling and smoothing the surfaces of floors, and has for its purpose to provide details of construction for a machine of this type, that afford a scraper which is simple, strong, and durable, perfect in operation, readily adjusted, and easily operated.

ROTARY MEASURING DEVICE.—S. IRINO, Salt Lake City, Utah. The invention relates more particularly to a measuring device which has a rotatable measuring wheel, distance indicating mechanism controlled thereby, a detent for holding the wheel immovable when not in use, and means for positioning the wheel with its point of contact with the ground, at a predetermined distance from a fixed point, so that it is possible therewith to measure accurately a distance starting from a wall or other obstruction.

OPERATING MECHANISM FOR DOORS.—W. H. EVANS, Buffalo, N. Y. This mechanism is for use on exit or other door for pay-as-you-enter cars, but may be employed to operate doors of almost every description. A vertical shaft having a crank secured thereto, the latter being connected by an adjustable connecting rod to an operating lever disposed so as to open the door, one end of the lever being supported in a swivel hanger, provided with roller bearings which act as a fulcrum. A detachable handle is also provided to engage the connecting means secured to the shaft.

Prime Movers and Their Accessories.

INTERNAL-COMBUSTION ENGINE.—C. W. SNYDER, Hudson, N. Y. The inventor's object is to provide an improved construction of valve mechanism, whereby the exhaust gas may be more completely scavenged from the cylinder at the end of the explosion stroke and the fresh charge more effectively admitted thereto. It relates more particularly to two-cycle engines.

LINE-CHECK.—W. H. FOWLER, Selma, Ala. This invention is an improved line check for use in connection with injectors and boilers. In its use the line check is placed half way between the injector and the boiler check, and the purpose is to provide a simple construction which will insure the working of the injector when the boiler check is stuck or otherwise inoperative.

INTERNAL-COMBUSTION TURBINE.—P. KRAUSE, Babylon, N. Y. This invention refers to turbines and more particularly to special construction whereby successive charges of an explosion mixture are ignited and the resulting gases under high pressure are delivered into engagement with the vanes or blades of the turbine. The specific construction involves certain improvements over the previous construction illustrated in the patent formerly granted to Mr. Krause.

Railways and Their Accessories.

RAILWAY PORTABLE COUCH.—E. BERLINGER, New York, N. Y. The invention has reference to couches, and more particularly to couches of such type as to be readily carried around by hand and useful to passengers upon railways, as a means for enabling a traveler to recline while aboard a car. When not in use the couch may be taken apart and the two cushions placed together.

CAR-FENDER.—G. R. WATSON, North Yakima, Wash. The purpose in this instance is to provide details of construction for a fender, that are practical and inexpensive, and which, when assembled and mounted upon a street car, will prevent serious accidents by catching and lifting into a safe position any one who has been struck by the fender.

SWITCH-ROD.—H. M. MITCHELL, Salt Lake City, Utah. A yielding rod allows the switch to be run through by a car either direction without damaging the switch points or breaking the operating connections; and after being passed, the points will automatically resume normal closed position. The improved rod is made in sections with a spring between, the latter being held in a novel manner and the rod section being so constructed as to maintain alignment and position, and adjustable to take up any slack and to properly make the connection between the switch point and the stand.

AUTOMATIC RETAINING-VALVE.—C. MARTIN and M. BEASLEY, Dickson, Tenn. The invention relates to fluid pressure brakes of the Westinghouse and like types, and its object is to provide an automatic retaining valve, arranged to allow of recharging the auxiliary reservoir without releasing the brakes, thus preventing the acceleration of the train, especially when running down a steep grade.

Pertaining to Vehicles.

SEALING COMPOSITION FOR VEHICLE-TIRES.—W. W. McCORD, G. F. CLARK, and P. M. HALL, Seattle, Wash. In this patent the invention has reference to certain improvements in pneumatic vehicle tires, and more particularly to a fluid or plastic substance, so arranged in the tire that in case of a puncture, the substance will immediately fill the aperture and prevent the escape of air.

WAGON-JACK.—D. A. GILCHRIST, Belgrade, Mont. Upon this lifting jack a wagon may be readily mounted and its wheels raised from a floor or the ground, and thus be free for removal for lubrication of the spindles that the wheels rotate upon. This lifting and supporting jack will serve effectively as a stock chute for a wagon.

STEERING-GEAR FOR TRACTION-ENGINES.—D. H. RANDALL and C. C. WHITCOMB, Coon Rapids, Iowa. This invention is in the nature of a gear designed more particularly for use on traction engines and motor vehicles, but applicable also to other uses. In such vehicles the usual method of steering is by a deflection of the front axle in a horizontal plane about its vertical kingbolt and it has been common heretofore to effect this by the motor mechanism of a steam piston acting through a chain passing around pulleys to the opposite ends of the front axle.

EMERGENCY-STOP FOR MOTOR-VEHICLES.—P. KRAUSE, Babylon, N. Y. In this case the invention pertains to improvements in motor vehicles, and more particularly to an emergency stop mechanism whereby the brakes may be applied and the engine stopped by a passenger other than the chauffeur, should the chauffeur be unable or unwilling to act in an emergency.

PORTABLE APPARATUS AND PROCESS FOR VULCANIZED REPAIRS OF PNEUMATIC TIRES.—E. ANSELMI, Viterbo, Italy. The present invention refers to an apparatus which allows all vulcanized repairs for damages in pneumatic tires in general, and in automobile tires more particularly, to be made without the aid of special workshops. The repairs may be made anywhere, in a short time, easily and with the best results.

Pertaining to Recreation.

SCORE-BOARD.—M. J. SHIMER, Bethlehem, Pa. The invention consists of a form of metal board supported above the table and having a movable tray pivoted to the under side thereof in such a manner as to be normally held in place, but readily movable to such a position that the pins may be taken therefrom or inserted therein. The score-board is for use in different games, but particularly in "cribbage."

FISH-HOOK.—R. E. SHEWARD, Council Bluffs, Iowa. The hook is more especially designed for holding live frogs, and while operating to securely hold the frog against displacement, will not impale or otherwise injure it, whereby the frog will appear natural in the water and will remain alive and fit for bait a comparatively long time.

Designs.

DESIGN FOR A JUNCTION-BOX.—H. ASHWORTH and A. D. WELCH, Kennebunkport, Maine. In this new and original design for a junction-box the construction shows a box of very simple and plain ornamental effect.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.



Kindly write queries on separate sheets when writing about other matters, such as patents, subscriptions, books, etc. This will facilitate answering your questions. Be sure and give full name and address on every sheet.

Full hints to correspondents were printed at the head of this column in the issue of March 18th or will be sent by mail on request.

(12070) N. R. Co. says: For some time we have been getting complaints from our customers that our radiators contain core sand, which gathers and obstructs the pipe leading to the radiators. We were confident that it was not core sand, since the trouble only appeared where the steam supply came from central heating plants using exhaust steam. The deposit usually gathered on the vertical pipes connecting with the radiator valve, collecting gradually until the pipe is entirely closed. We were anxious to know the nature of the material causing the obstruction, and had it analyzed by a chemist and inclose copy of analysis. You will note that it is composed almost wholly of iron peroxide. If the obstruction was caused by core sand, the analysis would undoubtedly show at least 95 per cent silica, as we use sand crushed from silica rock for our cores. Our chemist was unable to give us any idea why the formation would appear only in the pipe connecting with the brass radiator valve, or why it would start to accumulate at the valve and extend down the pipe. We believe some of your engineers can solve the problem, and would thank you for an early reply, sending your bill for services along with your reply. [Note: The Editor of the Notes and Queries Column prosecuted investigations as requested, and rendered a bill for \$5 for same. Questions of a purely special nature requiring considerable research will be answered at cost.—Ed.] A. Your letter presents an interesting and rather mysterious problem, and after careful study of the possibilities we beg to submit the following alternative hypotheses for its explanation: The explanation on the whole most probable is that your clients are at least partially right, and that the deposit, while not core sand, may come from the inside of the radiator. The particular form of the deposit carefully shown in your sketch rather strongly suggests this. Any material in solution or suspension in the condensed steam collecting above the valve, upon closure of the latter, would upon the opening of the valve or by leakage past it be admitted to the vertical pipe, which would be much hotter. The material can readily be imagined, therefore, to be deposited by re-evaporation of the conveying liquid before the latter has had time to trickle far down the vertical pipe. The interior surface of the radiator, while carrying no core sand, may readily be supposed to be sufficiently spongy on the surface for particles of iron to become detached by the alternate heating and cooling of the radiator and the alternate action of steam and air. If this is the explanation, the action should not be repeated, or should be so much reduced as to be negligible upon the deposit being removed and the radiator and pipes being cleaned after a few weeks' use, so that a noticeable cessation in the action should be contributory evidence that such is the cause. The occurrence of the deposit at a junction between brass and iron immediately suggests galvanic action, but electrolytic deposit of iron could not take place unless iron were already present in acid solution in the water. A very slight acidity would be sufficient to cause the iron to be attacked in some part of the system, most probably the boiler, and very little sulphate or other soluble salt of iron would cause a slight galvanic action between the brass and iron, the cumulative effect of which would be sufficient to produce the deposit. The fact that analysis shows the deposit to be peroxide and not metallic iron is no proof to the contrary, as the deposited metal, although in metallic form, is spongy and readily attacked by water, steam, and air, the electrolysis itself accelerating oxidation. If this is the explanation, the trouble is more serious, as iron must be attacked continuously elsewhere by the acid to provide electrolyte. The remedy is, however, comparatively simple: substitution of iron for brass valves would immediately stop the deposit, but a change of boiler water is to be recommended, or failing that, neutralization of the acids is solution by addition of alkali. We hope that the foregoing will at least suggest the means by which you can discover the cause of the trouble, and that the remedy will easily follow. Analysis of your boiler water for acids and recommendation of an anti-corrosive in accordance with analysis is the most obvious course.

(12071) W. C. D. says: As a subscriber of your paper I ask for the following information: I have two tanks, one for copper solution and the other for nickel. I would like to know what chemicals should be used, and in what proportions, both for nickel and copper plating, and what kind of a current must be used. Can I use a storage battery for the purpose? Articles to be plated are