RECENTLY PATENTED INVENTIONS.

The Inventions described in this Department were Patented through the Scientific American Patent Agency.

Electrical Devices.

TROLLEY POLE CATCHER.—J. H. Walker, Lexington, Ky. The invention is an improvement on a trolley pole catcher previously invented by Mr. Walker. It consists of a carriage mounted to slide along a horizontal rack on the car roof and links connecting this carriage with a sleeve that rides on the trolley pole. The device will yield sufficiently to permit adjustment of the trolley pole to slight inequalities in the wire; but if the trolley wheel should slip from the wire the parts will operate to arrest the upward movement of the trolley pole.

Of Interest to Farmers.

CULTIVATING MACHINE.—C. Soltész, New York, N. Y. The invention relates to the cultivating machine of the type drawn by horses. The operator walks alongside of the machine and manipulates a handle to guide the general direction of travel. The machine is fitted with pairs of cutter disks, with hoes between each pair, and the operator may move either the hoes or the cutters, or both into engagement with the ground. He can also adjust the depth of cut of the hoes or disks at will.

HARVESTER.—C. F. Blakeslee, Rapatee, Ill. This harvester is equipped with a draft mechanism that greatly reduces draft strain by enabling the direct transmission of progressive movement from the main driving traction wheel to the other ground wheel that supports the outer end of the grain table, thus causing the ground wheel to travel with the same speed as that of the traction wheel.

Heating and Lighting.

STOVE BASE.—J. Sharon, Canaseraga, N. Y. The object is to mount a stove base upon castors in such a way that the castors are normally in a withdrawn or inoperative position, at which time the weight of the stove base rests upon the legs. When desired the castors may be brought into an operative position so that the stove may be moved conveniently.

BOILER.—W. S. Hawley, Landing, N. J. The invention relates to that type of boiler in which the water is contained in a plurality of superimposed communicating sections inclosed in a casing, the products of combustion being caused to pass back and forth between the sections to heat the same. The object of the invention is to provide improvements whereby the space between the sections may be more readily cleaned, the water in the lowermost section more effectively heated, and the series of sections more effectively supported.

Household Utilities.

HOLDER.—Elizabeth L. Lloyd, Utica, N. Y. This holder is especially designed for holding bed clothes in place on the bed, but it may also be adapted for clamping fabric generally and thus may be found useful as a towel holder, or as a clamping device for hose-supporters and the like. The jaws of this holder are in the shape of rings, one of which will pass within the other, pressing the fabric into cup-shape, and thus securing it against displacement.

PAN HOLDER AND STOVE LID LIFTER.—B. Kessler, Cabinet, Ohio. This device may be used either as a holder or handle for pans, or as a stove lid lifter. The handle is fitted with a shank which terminates in a toe adapted to fit the slot of a stove lid. This toe may also be fitted into a fork which may be passed under a pan while a catch on the handle serves to grip the rim of the pan.

Machines and Mechanical Devices.

FOLDING BELLOWS PEDAL.—C. S. Wright, Grand Haven, Mich. The invention relates particularly to automatic player pianos and provides an improved folding bellows pedal arranged to permit the user of the piano to conveniently and quickly move the bellows pedals into active position or fold them into inactive position to allow the player to use the action pedals when playing the piano by hand.

MUSIC LEAF TURNER.—J. W. Albin, Babylon, N. Y. The mechanism is adapted to support sheet music on a musical instrument and successively turn the sheets. The mechanism also serves to return all the sheets simultaneously to their original position so as to permit the piece to be played over again.

ATTACHMENT FOR TALKING MACHINES.—C. Martelock Oroville, Cal. The particular object of this invention is to provide an attachment for a machine known commercially as the B. C. graphophone. The attachment is designed to increase the delicacy of adjustment between the record and the stylus needle and also to increase the general efficiency of the apparatus.

WASHING MACHINE.—T. C. Sörensen, Copenhagen, Denmark. The invention provides an arrangement in connection with washing machines of the kind that consists of a firm casing containing the washing solution, within which revolves a perforated drum provided with buckets on its outer surface into which drum the clothes to be washed are placed. The buckets are formed by means of curved plates extending the whole length of the drum and at a certain distance from the same and connected to the drum by means of radial plates.

CONCENTRATOR.—R. H. Manley, Stockton, Cal. The object of the invention is to provide a concentrator for separating heavy materials from lighter ones, such as gold from sand, or extraneous matter. The device is arranged to allow of effectively treating a large quantity of material in a comparatively short time with or without the use of water.

TAKE-UP FOR LOOMS.—B. Wehrlen and F. C. Matthews, Pompton Lakes, N. J. The device serves to draw fabric such as a ribbon from the loom, and it is practically impossible to release the fabric from this device owing to its novel construction, hence the possibility of slackening the warp with the danger of interfering with the operation of the weaving is obviated. The take-up leaves the front of the loom entirely free and unobstructed and does away with the cumbersome wooden frame usually employed.

DIGESTER.—C. Edgerton, Philadelphia, Pa. The invention relates to digesters of the type in which an outer containing vessel is provided interiorly with a rotating perforated receiver suspended within the outer receiver by means of trunnions, and provided with gears for rotation within the stationary container. The invention relates particularly to a novel construction of receiver and container, such as will facilitate the discharge of both solid and liquid matters.

APPARATUS FOR TESTING FLUID METERS.—T. B. Dornin, Norfolk, Va. In the operation of testing water meters, it is necessary to temporarily couple up the inflow and outflow nipples to a supply pipe so that the supply water flowing through the meter will register on the dial and then discharge into a measuring tank where the volume of water is compared with the registration on the dial. The present invention provides a simple construction whereby a large number of meters may be simultaneously connected with tight joints to the supply pipe, so that all the meters may be tested at once. Mr. Dornin has also obtained a patent on another construction which performs the same office of permitting a number of meters to be tested at the same time.

HAND SCHOOL-LOOM.—Beatrice E. Lindberg, Faribault, Minn. The invention relates to kindergarten looms and is an improvement upon previous patents by the same inventor. The present improvement consists in arranging the loom to permit the weaver to conveniently open and change the shed for the passage of the shuttle or needle used for carrying the weft through the open shed.

WOOD-BORING MACHINE GUARD.—E. R. King, Memphis, Tenn. Operators of wood-boring machines are frequently injured or their clothing is torn by contact with the rotating heads, or clamping screws of the boring bits. To prevent such accidents, Mr. King has devised a skeleton guard which entirely incloses the bit proper and the rotating spindle head.

Prime Movers and Their Accessories.

LUBRICATOR.—J. Noethe, Elkton, South Dakota. This lubricator is of the four-speed type adapted for use on engines and is so constructed that when the engine is started a pressure is placed on the oil in the reservoir and the oil is mechanically forced through a suitable pipe into the steam chest or other portion of the engine requiring lubrication.

WAVE MOTOR.—R. Craig, Los Angeles, Cal. This motor is adapted to be operated by the rise and fall of waves of the sea. The invention provides novel details of construction adapted to effect the positive and continuous conversion of the force of the waves during their rise and fall into a rotary motion of a driven-shaft for the actuation of other mechanism.

Railways and Their Accessories.

CAR WHEEL.—T. M. Crepar, Fargo, North Dakota. The object of the invention is to provide a simple, strong and inexpensive car wheel, adapted to be mounted with another similar wheel rigidly upon a car axle and having means for permitting the independent movement of each wheel rim in rounding curves. The hub section is made rigid with the axle, while the rim is movable relatively thereto, bearing balls or rollers being interposed between the sections.

HEATING FURNACE.—W. N. Best, New York, N. Y. This furnace is adapted particularly for heating railroad tires or other bodies, and comprises an improved wall structure for the furnace with means for delivering the heating medium to the interior thereof. The inlet through which the hot gases from the burner pass into the furnace is constructed to give a uniform distribution of heat.

RAILROAD TIE.—R. L. Bower, Blandburg, Pa. The invention provides a metallic tie arranged to prevent movement of the tie in the direction of its length, that is, transversely to the roadbed, thus rendering the tie eminently useful on curves and other places subjected to great force by passage of heavily loaded or fast trains.

MEANS FOR CONNECTING PARALLEL RAILROAD RAILS.—V. A. White, Aliceville, Ala. The invention provides means for connecting the parallel rails of railroad tracks whereby they are held rigidly spaced apart at the required distance, so that separation of the rails is impossible. The invention also includes means for connecting the meeting ends of railroad rails and holding them in rigid alinement.

CAR STAKE.—N. E. Gagnon, Woodland, Wash. This car stake belongs to that class of stakes adapted for application at each side of a flat car on which logs are loaded. The improved stake is arranged to be applied to the sockets generally found at the side of such cars, or it can be fastened thereto in various other ways.

Of General Interest.

LUBRICATING CUP.—C. Stewart, New York. This oil cup is of air-tight construction with an outlet below the normal liquid level, and is provided with an air inlet which may be adjusted to control the admission of air so as to govern the flow of lubricant through the outlet.

HARNESS BUCKLE.—L. L. Rounds, Orange, N. J. The purpose of the invention is to provide a harness buckle, more especially adapted for use on a saddle girth, and arranged to permit a rider to pull the saddle girth tighter without dismounting. Means are also provided to prevent the buckle from opening accidentally.

FIRE-NOZZLE ATTACHMENT FOR VALVES.—J. D. Schierloh, Jersey City, N. J. A combined faucet and fire nozzle is provided by this invention. The handle of the faucet is fitted with a nozzle which may be rotated thereon and the handle also may be rotated on its axis to direct the stream issuing from the nozzle to all portions of the room or compartment. By means of a set screw the handle may be released from engagement with the stem of the faucet valve and the water will then flow through the handle and out of the fire nozzle.

ADVERTISING APPARATUS.—J. Reix, 33 Boulevard des Batignolles, Paris, France. The invention consists in providing a pair of parallel wires which may extend around the house or on the front of a building. Suspended from these wires, which receive current from a source of electricity, is a carriage provided with a motor which causes it to travel along the wires, and a procession of luminous letters which are also suspended from the wires are connected to the motor carriage.

FOUNTAIN BRUSH.—H. Kadushin, New Rochelle, N. Y. This fountain brush is designed to contain an acid or other cleansing liquid to permit of using the brush for cleaning type, textile fabrics, and other articles and materials. A special form of slide valve is provided which controls the flow of the acid to the bristles.

IMMERSION REGULATOR PARTICULARLY ADAPTED FOR TORPEDOES.—A. E. Jones, Fiume, Austria-Hungary. The invention has for its object to improve the immersion regulators used on self-propelled torpedoes in which the combined action of a hydrostatic piston and a pendulum is employed. The invention relates particularly to diminishing certain resistances at the joints, thus assuring the operation of the device under all conditions.

FLOWER STAKE.—W. Henshaw, Springfield, N. J. This stake or support is adjustable to suit plants of different sizes and has a special construction facilitating the attachment of the stake to supporting wires such as are used by florists for holding the plants in an upright position when they are being sprayed.

BOTTLE.—J. A. Gaffney, Brooklyn, N. Y. The bottle belongs to that class of non-refillable bottles in which a loose grooved stopper is held in the bottle neck in such manner as to permit outflow of liquid when the bottle is inverted, but which normally seats downward in such position as to prevent ingress of liquid.

FASTENER.—L. F. Hammer, Omaha, Neb. This fastener is adapted for use on fences, cribs, or the like, for removably supporting cross boards, panels, etc., in position. The fastener is rotatably mounted on its support and may quickly be moved to such position as to permit the removal of any one of the cross boards without deranging those remaining in place.

CHAPLET AND SHRINE OF THE HOLY ROSARY.—W. Hendrick, New Haven, Conn. The object of this invention is to provide an improved chaplet and shrine of the Holy Rosary arranged to successively display pictures of a religious character, one at a time, and in proper order, according to the intended devotional exercise.

APPLIANCE FOR RELEASING BOATS.—C. L. Bevins, Jamestown, R. I. Mr. Bevins has invented an improvement in appliances for releasing boats, especially lifeboats from the davits of vessels, docks, and other elevated places. The invention provides means operable to simultaneously disconnect both the bow and the stern of the boat whereby the danger of launching is materially diminished.

WATCH.—J. T. Pendlebury, 12 Thornley Brow, Manchester, England. The invention relates to dust covers for the movements of watches and provides a simple and efficient dust-proof cover which will permit the regulator to be altered without removing the cover. The cover is preferably made of celluloid.

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.

Full hints to correspondents were printed at the head of this column in the issue of August 8th, or will be sent by mail on request.

(10888) J. L. M. asks: What is the most practical and least expensive process to produce, as near as possible, an absolute vacuum in a chamber containing about four cubic feet? Will it require a greater capacity of power to empty a large space than it will a smaller one? A. To exhaust so large a space it will be necessary to use a mechanical air pump. It is not possible to produce an absolute vacuum by any means of exhaustion. It will, however, not require any greater power to empty a large reservoir. It will require more time.

(10889) E. V. V. writes: I have had some little trouble in convincing a man that ice forms on the bottom of a running stream of water, but having seen the same I know I am right. Would you kindly answer same in your valuable paper? A. Anchor ice is often to be seen fastened to the stones on the bottom of a stream, and also to the timbers around a mill. Very frequently mills are stopped by the anchor ice during a very cold snap.

(10890) B. H. G. asks: Please inform me through your Notes and Queries the principle and details of the radiometer? A. The radiometer is a heat instrument. Light has no connection with it. It consists of a glass globe, usually about two inches in diameter, exhausted to a suitable degree. Within is a steel pivot upon which revolves a cross arm carrying four vanes of aluminium, one face of which is blackened by carbon. When heat falls upon the vanes the black faces absorb more than the bright and are hotter. The molecules of air coming in contact with the black faces are heated more than those coming in contact with the bright faces and rebound with more force. The reaction of this rebound causes the vanes to revolve with their black faces in the rear. The globe itself has been made to show a tendency to rotate in the opposite direction to the vanes, this being due to the bombardment of the inner surface of the glass by the stream of molecules which rebound from the vanes. Thus the radiometer is a heat engine, transferring heat from the black side of the vanes to the surface of the glass opposite. A satisfactory explanation of the phenomenon is given in Barker's "Physics," price $3.75 by mail. See also Supplements 13, 37, price ten cents each. 2. Please state also whether energy exists in light, and to what extent. A. Light and heat are now classed together as radiant energy by scientists, and the energy of both is measured by absorbing some material and determining the heating effect it produces. The energy of light as light has not been measured by any mechanical effect which it can produce.

(10891) C. M. A. asks for information concerning sodium silicate. A. Silicate of soda (or soluble glass) is prepared by fusing together carbonate of soda and sand, or by boiling flints in caustic soda under great pressure. It is not soluble in cold water, but dissolves in five or six times its weight of boiling water. It is employed in the manufacture of soap, in fixing colors, in preserving stones from decay. In admixture with other silicates, silicate of soda occurs in glass; and it (equally with silicate of potassa) imparts the property of viscidity before fusion to such mixtures, which is of great value in the working of glass.

(10892) J. N. P. says: 1. Why and how does water put out fire? Why does the water have the same effect whether hot or cold? A. Water puts out a fire by reducing the temperature of a flame below the point of ignition, and is especially efficient for this purpose because of the large amount of heat that is required to turn it into steam. It is almost as effective when hot as when cold, because of the great amount of latent heat in the water. 2. Does the sun shining directly on a cooking stove have any effect upon the cooking? Does it lessen the baking in any way? If when shining on a fire in an open grate, does it reduce the heat? A. The sun shining directly on a stove or fire in an open grate tends to increase the temperature slightly, just as it tends to increase the temperature of any other object. The bright sunlight, however, may make the fire appear less brilliant, and therefore appear to give out less heat. This effect, however, is deceptive.

(10893) W. B. H. writes: I was given a question in a recent examination that the examiner stated was proved in a copy of your magazine; but he could not state the date the example appeared nor prove it himself. The