

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**FLOATING OR SUBMERGABLE DOCK.**—Manuel Guastavino, New York City. This dock is designed not only for raising sunken vessels, but also for repairing vessels afloat. It is U-shaped and formed of a series of watertight compartments, with the base or wider portion downward, valves for the introduction of air and expulsion of water from the compartments, and a series of hydraulic lifts for handling the vessel to be raised. Adjustable struts are provided for supporting the vessel in upright position in the dock, combined with which, also, are screw propellers operated by engines driven by compressed air, the whole construction being designed to reduce the work of handling sunken vessels to simple and positive operations, at a minimum of expense and risk.

**DITCHING MACHINE.**—David K. Smith, Pico Heights, Cal. In machines operated by traction engines, and with a plow for forming the ditch, this invention provides certain improvements, whereby, as the engine with its equipment is made to pass along the ditch, the operators standing on the platform may control the plow, the depth of digging being regulated by means of cables and a drum, while, through adjustable end sections, the desired cross sectional form may be given to the ditch, this being effected by the movement of the plow transversely in its guides, although the machine may be operated without the plow guide.

## Railway Appliances.

**RAILROAD RAIL CHAIR.**—Maurice Lewis, West Grove, Pa. For the efficient connection of rails with the cross ties, and at the same time afford an elastic cushion between them, this inventor employs a series of superposed metallic sheets or plates as a cushioning medium for each chair, there being on the series of each chair a metallic cap piece on which rests the outer ends of the clamping plates, whose inner ends engage the base of the rail, the whole being held in position by bolts passed down through the tie.

**RAIL FASTENING.**—Wallace C. Kemble, Trenton, N. J. To obviate the necessity of driving spikes into the tie, and yet hold the rail in such manner that it may be readily released, according to this invention, a plate is made with upwardly projecting lugs, adapted to engage or disengage the rail base by being revolved on a pivot, the pivot bar extending through the tie, and being engaged by spring catches to hold the bar securely when the top plate is locked to the rail base, and disengage itself when the plate is revolved. A plate carrying the means of engaging and locking the lower end of the pivot bar is located beneath the tie.

**STATION INDICATOR.**—George S. Weaver, Albany, N. Y. This is a device arranged in a suitable casing to be fixed near the end of a car, there being in the casing rollers on which is a belt containing the names of stations on the route. The conductor, brakeman or driver is enabled to readily move the belt to bring the names of the stations in order before a suitable opening in the casing, as the car reaches or leaves the several stations, the device acting automatically to prevent the belt moving backward.

**CAR COUPLING.**—Henry G. Harrington, Magnolia, Ark. In this device the drawhead has a link seat which is entirely housed, with an incline or depression at the back end of the seat, and a central rigid core. The coupling bar is shouldered, and a depression block is arranged for vertical movement behind the link core, with means for operating it to lift the link and uncouple the cars. The device is adapted to effect the coupling automatically without the necessity of trainmen going between the cars, is adapted to couple with cars having the ordinary drawhead and pin, and gives the same ease of movement that is obtained with the old-fashioned link and pin.

**TOOL FOR TRIMMING OFF TREENAILS.**—Albert Collet, Paris, France. Where externally threaded hard wood treenails are used to consolidate the screws, clamps or spikes in railway sleepers, it being necessary afterward to cut off the projecting head of the treenail level with the sleeper, this invention provides, as a cutting off tool, a kind of circular plane formed by a piece of cast metal having in its lower face a circular flange to take support on the sleeper when the cutting edges are at work, and prevent the cutting edges from penetrating into the treenail below the surface of the sleeper. The core of the tool has a square head on which fits the operating key, and in its under face is a dovetailed slot, in which fits a knife with a number of cutting edges.

## Electrical.

**CONDUCTOR.**—James Swinburne, London, England. This patent is for a conductor made of electrically deposited zinc or other metal, which is then compressed to increase its density and tenacity, it being claimed that zinc conductors may thus be made, in many cases, to be more economical than copper for a given amount of conductivity. It is also claimed that the evil effects of self-induction, or skin effects, are reduced, and that such conductors are more economical when subject to corrosion by electrolysis.

**ELECTRIC TRAP.**—George B. Vaughan, Kirkwood, Mo. This is a trap for nocturnal insects, and has a platform which is accessible from any direction, but which constitutes one terminal of an open electric circuit, a bait holder constituting the other terminal of the circuit, and the arrangement being such that when the body of an insect comes in contact with the bait holder and platform the current will pass through its body and instantly kill it.

**TROLLEY WIRE HANGER.**—John F. Faulkner and Royer, Campbell, San Antonio, Texas. This invention provides a clamp for trolley wires designed to obviate all danger from broken insulator bolts, and consequent damage to the trolley, the wire, and the span wires. An upper and a lower or removable jaw are attached to the insulator by means of a screw, and by rotating the screw, when the parts are applied to a wire, the lips of both jaws are made to firmly clamp the wire. The device is easily and quickly adjusted, without calling for special skill in the workman.

## Mechanical.

**SHOE SEWING MACHINE.**—Adam H. Prenzel, Landingville, Pa. Two patents have been granted this inventor for improvements in machines for making "turn shoes," or that class of shoes in which the soles are stitched to the uppers while the shoe is turned wrong side out, the shoe being afterward turned right side out. The sole is channeled along its edge to form an overhanging lip, against which the edge of the upper and lining are pressed by a breakdown bar, giving room for the curved needle to enter, when a looper throws a loop of thread around the barbed end of the needle, forming a stitch as the needle is withdrawn. One of the patents provides improved means for feeding the shoe past the needle, and for bending down the outer edge of the sole to give more room for the curved needle to penetrate its channeled edge. The machine is designed to be very simple, durable and economic in its construction.

**SKIM PRESS.**—Rudolf Ruetschi, Argentine, Kansas. To rapidly and properly separate skim, dross, or metal alloy, from molten lead or other metal, pressing the skim to remove from it any adhering molten metal, and then removing and dumping the pressed refuse, this inventor has devised an apparatus movable to and from the kettle by means of a hanger on an overhead rail, by which an open work basket or cradle may be moved into and out of the kettle, to receive the skim and dross, and which in its upward movement meets a fixed platen by which the skim and dross are pressed, the molten metal passing back into the kettle. The quick action of the press, bringing the material under pressure when hot and soft, proves very efficient.

**CURRENT MOTOR.**—Asa B. Frame, Boyden, Iowa. This is a motor designed to be operated by the current of a stream of water, to run pumps or other machinery on land, the construction being such that the current bears both on the receiving and the discharge side of the wheel. In a suitable frame is supported a vertical shaft from which radiate spokes supporting blades, an eccentric on which is an eccentric strap surrounding the shaft, and rods connecting the eccentric strap and the blades. As the wheel turns each gate or blade assumes an angle of about forty-five degrees when at the side of the wheel where the current is received, and also at the side where the water is discharged.

## Agricultural.

**HAY RAKE AND LOADER.**—Samuel M. Jenks, Madison, South Dakota. This machine is made to pick up the hay cleanly and thoroughly from the ground and automatically deliver it to a traveling platform provided with pickers by which the hay is carried upward and forward to be received by a transverse conveyor, by which the hay may be delivered at the desired elevation, or to a receptacle at the side of the machine. The rake head is of special novel construction, and may be used with a horse hay rake. All the conveyers and the elevator are driven from the driving gears of the rear supporting wheels, and there is but little and very simple intermediate gearing.

**COTTON PICKER.**—David S. Deaderick, Mammoth Springs, Ark. A wheeled frame adapted to be moved over a field is provided, according to this invention, with picking devices, preferably in the nature of endless bands arranged to engage the bolls of the cotton plants and remove the fiber, there being means for guiding the plants to the pickers and for cleaning the cotton from the pickers and delivering it to distributing devices. The picking devices are made somewhat yielding to accommodate themselves to various positions of the plants, and the picked cotton is free from dirt or foreign matter, as the picker cloths or aprons do not retain such substances, the cloths themselves being protected from damage or soiling by contact with earth, stones, etc.

## Miscellaneous.

**ADDING MACHINE.**—Wm. J. Ensworth, 337 W. 11th St., Erie, Pa. This invention is for an apparatus the prime object of which is to provide means for casting individual sums into an aggregate without the use of complicated movements and such other fixtures as tend to produce an expensive machine. Such an object is attained with great efficiency by the combination of a suitable register, for showing the total, with a system of differential gearing, each element of which gearing imparts to the register a characteristic movement. These movements respectively represent the individual amounts that are to be added; and, consequently, as these movements are applied to the register, the register shows accurately the aggregate of the individual sums. The gears employed are of two divisions: the numbers under ten are struck by paws carried on key levers and engaging ratchet wheels, and the numbers ten and over are struck by toothed sectors having knuckle-joint connection with their key levers and meshing with pinions the teeth of which vary according to the numbers which the pinions represent. Both the ratchet wheels and the pinions transmit their movement to the register, so that the total is indicated. The claims cover the two divisions of gearing both separately and combined, so that under the patent the machine may be made with the two divisions of gearing combined, or should it be advantageous, with either division separately.

**GRAIN ELEVATOR.**—Emile Blanchard, Paris, France. This invention provides a continuously acting apparatus by which the grain is drawn up from any point in a vessel and delivered on a wharf or elsewhere by pneumatic propellers, which consist of air-tight chambers connected with suction and compression air pumps, an automatic distributing apparatus being so applied to the propellers as to assure the communication of each chamber in turn either with the air and grain suction pipes or with the compressed air and grain delivery pipes. The elevator may also be employed for transporting grain, etc., from one place to another.

**TYPEWRITER RIBBON FEED.**—George A. Seib, New York City. A ribbon feed mechanism devised by this inventor is of simple construction and wholly free from the key levers, much reducing the amount of finger pressure required for operating the keys. In the step by step movement of the carriage an

actuating plate is moved to draw upon a flexible connection whereby a sleeve is rotated to turn one of the ribbon wheels, the movement of the carriage back in the ordinary manner causing a spring to rotate the sleeve backward.

**PAPER BOX.**—Joseph C. Hewitt, Montclair, N. J. A fastening device for paper boxes, provided by this invention, is designed to afford a sufficient area for securely fastening the flap, making a very neat box which can be secured with a minimum of labor. The invention consists essentially in dividing the tuck flap into two parts, one of which may be inserted beneath the side of the box and the other pasted to its outside.

**COPY HOLDER.**—Frank Jones, Marion, Kansas. This device comprises a set of feed rollers which are adapted to receive between them a sheet of copy, or when the copy is a book or set of sheets fastened together they will receive between them a tape or band connected to a guide or rule movable over the surface of the copy. The feed rollers are given a step by step advancing movement by means of a ratchet driving connection from a spring-returned rod, provided with a key and depressed by hand. The device is designed to facilitate copying all kinds of writing or printed matter, whether in books or sheets.

**SHIP'S FORM.**—Otto Hartwich, Swinemünde, Germany. This invention proposes to modify the shape of a vessel's bow so that it will divide the water horizontally instead of vertically, one portion of the water being deflected upward and the other downward. At the bow is a broad forward projection under the water line, presenting a horizontal dividing edge, and the hull is made with a transversely vaulted concave bottom, the concavity extending forward to the projection. The vessel also has a bottom rudder immediately behind the bow, occupying part of the keel space, and completely protected by the bottom.

**LOGGING TRUCK.**—John W. Smith, Columbia, Fla. Secured by yokes on the upper side of the metallic axle of this truck is an I-beam, whose lower side is curved to lie snugly against the curved side of the axle, while a chain block rests on the upper flange of the I-beam, and has parallel ribs forming a channel through which the chain may pass. Secured to the front face of the I-beam is a collar in which the rear end of the pole is fitted, the pole being braced on the beam by means of channel irons, and the whole construction is very strong and economical to manufacture.

**TANNING.**—Charles O. Shaw, Cheboygan, Mich. To facilitate the quick tanning of heavy hides in a drum or wheel, this inventor provides such drum with a coil of pipe in its lower portion for heating the tan liquor, which is forced in under pressure, and centrally in the drum is a reel on which the hides, connected together end to end, are adapted to be wound quite close together, thus filling almost the whole interior of the drum, which is then revolved by power from a shaft extending to the outside. The pressure of the liquor in the drum is regulated by weighted valves on the outlet pipe, and the hides while being tanned are held by the reel in a fixed and well smoothed out position. It is preferred to employ a series of connected drums, the first of the series receiving the stronger liquors, which become weakened by parting with their tannin in passing through successive drums.

**VEGETABLE CUTTER.**—Oscar A. Bulette, Chicago, Ill. To facilitate the cutting or slicing of vegetables, fruit, etc., this inventor has devised an improvement on a cutter formerly patented by himself, comprising a holder for the blades, whereby the blades and holder will be of unequal contractibility when cooling, the blades being tightened by this property of the holder and preventing any buckling of the blades during the tempering operation. A subsequent galvanizing or tinning, in addition to forming a protection for the cutter, operates as a hard solder to firmly unite all the joints of the cutter.

**WAGON STEP AND CHAIR.**—Henry G. Harrington, Magnolia, Ark. This is a combination device which can be used as swinging wagon step adapted to be hung on the wagon body or adjusted as an ordinary step ladder to be used independent of the wagon, being also foldable to form a convenient seat. The several parts are simple and inexpensive and may be quickly adjusted according to the desired use.

**MARBLE FOR RELIEF PRINTING.**—John G. Weaver, Salt Lake City, Utah. To prepare onyx marble for use in relief printing, this inventor first applies the design with an ink composed of gum elemi, nutton tallow, soap, beeswax, lampblack and turpentine, then dusts over with dragon's blood and ground asphalt, to be incorporated with the ink by flame, then paints the ends and back of the stone with an acid resisting varnish, and then etches the exposed surface in a bath of water, gum, turpentine, nitric acid and sulphuric acid, finally removing the ink off the design and cleaning the stone.

**STOVE.**—William S. Nicolson, Salisbury, N. C. This stove has a casing extended above its top and forming a drum chamber with lateral air inlets, there being also in the drum section upper and lower plates, a baffle plate extended within the drum section, through which also lead air flues, while the smoke flue projects from the body of the stove upward into the drum section, the construction being designed to promote the strongest possible circulation of heated air, to heat a room with the least expenditure of fuel.

**WIRE STRETCHER.**—Walter Z. Brannon, Brazos, Texas. This invention provides a simple and inexpensive tool which may be applied to a wire and supported on a post, or maintained in working position between posts or uprights, to bring the wire under any desired tension in a quick and convenient manner. A lever has shifting connection with a draught rod mounted to slide on a support, the wire being connected with the draught rod by a clamping arm and keeper, while a check nut and keeper at the side of the lever are arranged to prevent the movement of the draught rod in one direction.

**NET HOLDER.**—Samuel A. Alling, Homer, Minn. A holder for a bed, mattress or net, to be used as a life-saving device, according to this invention, is so constructed that it may be folded to occupy but

small space when not in use and quickly placed in position for use when required. The receiving surface yields under the falling weight received, but does not rise to cause a rebound of the body, although the net or bed may be readily restored to its upper or normal position by persons standing at the base of the device.

**ADJUSTABLE COUCH.**—William Edeler, Brooklyn, N. Y. This couch is made of tubing and fittings, and has body and end sections adapted for adjustment relative to each other to form a sofa, a lounge with a head rest at the right or left, or as a bed, provision being made for readily securing the mattress in position, and the entire construction being simple, durable and inexpensive, a spring mattress not being needed.

**GAME APPARATUS.**—Dallas Du Bois, Montclair, N. J. In a cross channel or groove in a turntable, located centrally in a tray having a flanged margin, is sufficient space for five disks or chips, and in each end of the tray are compartments for other disks, the several sets of disks being of different colors, but the end compartments having each a blank space. The game consists in moving the disks through the spaces in the turntable from one end of the table to the other, by displacing one with another until all have been so changed and the disks in the middle spaces of the turntable returned to their original position.

**NOTE.**—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

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