

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**STEAM GENERATOR AND TANK HEATER.**—Thomas F. Butterfield, De Witt, Iowa. This is an improvement upon a former patented invention of the same inventor, and provides a portable heater in which the tank top is formed by a head plate or cap having an integral upward rim flange and a depending flange, and having air and fuel inlets, and a smoke outlet, there being a fire chamber or furnace secured to the depending flange of the cap. The heating chamber is sunk in the tank until the water rises above the top of the fire chamber and alongside the rim flange of the head, the entire heat from the chamber being utilized to heat the water in the tank.

## Railway Appliances.

**CAR COUPLING.**—John S. Williams, Krebs, Indian Territory. With this improvement meeting cars are coupled automatically either on a curve or straight line of railroad, the uncoupling being readily effected from the side of the car. In a hollow drawhead is a vertically slidable coupling pin, a coupling link being held projected by a forwardly spring-pressed slide bar, and supported on an apron hung from the drawhead by a swivel-connected arm adapted to incline and laterally adjust the projected end of the link.

**CAR FENDER.**—Peter Dunwald, Rio, N. Y. This improvement comprises revolvable brushes extending in V-shape in front of the car, and revolved from its running gear, by which a person in the path of a moving car will be swept to one side, or be received on falling in a netting at the rear of the brushes. The mechanism connecting the revolvable brushes with the car running gear may be moved into or out of operative connection by a lever fulcrumed on the car platform.

**CAR COUPLING.**—James N. Van Dorn and Charles G. Seaman, Spokane, Washington. In this coupling each drawhead is provided with a shoe and a dog arranged side by side, the shoe having an opening adapted to receive a hook on the dog of the opposing drawhead, the hooks of both dogs, as the cars come together, sliding over the noses of the opposing shoes and dropping into the openings, making a double connection. The coupling takes place automatically, and uncoupling may be effected without going between the cars. A car with this improvement may also be readily coupled with another having only the link and pin coupler.

## Electrical.

**CANAL BOAT PROPULSION.**—William Elmer, Jr., Trenton, N. J. Instead of running a motor on a suspended cable for canal boat haulage, this inventor provides means for moving a truck along the towpath, the electric motor being mounted on the truck and receiving energy from a trolley wire, and also carrying a rotating sheave around which a suspended traction rope is engaged, so that when the sheave is rotated by the motor the truck is moved along. The motor is easily operated, and the power required for its own propulsion is reduced to a minimum.

## Agricultural.

**PLOW.**—Herman Symank and Ernst Matthijez, Giddings, Texas. This invention relates especially to an improved sweepstock, and is an improvement on a former patented invention of the same inventors, so improving the construction that the stock may be used with any form of share, as a sweep, a double plow for bursting middles, a single plow, a shovel, or a like implement. The sweepstock is also provided with a point integral with its shoe or footbar, and which will assist in holding the share in position.

**DRAUGHT EQUALIZER.**—Cornelius P. Houtama, Sioux Center, Iowa. To evenly distribute the force of four horses drawing a grain harvester, mowing machine, or other agricultural implement, this inventor has devised an equalizer designed to correct the tendency to side draught where there are three horses on one side of the tongue and one horse on the other side. The invention also provides a simple means for the ready attachment of the equalizer without drilling holes in the frame bars of the harvester or other machine.

**HAY PRESS.**—Andrew C. Miller and Edward A. Johnson, Commerce, Mo. This is a press adapted to be continuously operated by a horse or other power, and comprises a frame having chambers to receive the hay, and having feeding and pressing plungers or pistons, a rotative shaft having arms, and a lever and connecting rod arranged to be engaged by the arms and connected to the pistons, so that when the shaft is rotated the arms will act on the lever and the connecting rod to move the pistons. The construction is very simple and inexpensive.

## Mechanical.

**COMBINATION TOOL.**—Willard Topliff, Youngs, N. Y. This invention combines the features of an ordinary try-square or the like, with a weather board gage, for use by carpenters either as a square or gage. The tool has a blade formed with a recess and a clip having two arms, one of which has a projection adapted to engage the recess, the arms being connected by a central portion extending beyond each side of the blade and capable of engaging one of its edges, to form a fulcrum on which the arms may be moved.

**CLUTCH.**—Ernest W. Carleton, Austin, Texas. A simple and economical clutch mechanism for transmitting power is provided by this invention, in which the clutch has independent rotatable disks that act on peripheral eccentric portions so arranged that the disk is held free from contact with the drive shaft and the entire bearing of the clutch mechanism is thrown on the grip members, the shaft apertures in the disks being made sufficiently large to overcome any irregularity of the bearing faces of the internal cam portions, and obviating the necessity of providing outside collars.

**SAW.**—Charles T. Redfield, Glen Haven, N. Y. This invention provides an improved frame for supporting the saw blade, the frame being trussed to

furnish a tensile strain between the middle portion of the cross bar and the upper ends of the end bars of the frame, by which a drawing strain may be exerted between the cross bar and the upper portion of the end bars in such a manner as to prevent the cross bar from moving out laterally under the strain of tightening the saw blade.

**STONE CUTTING MACHINE.**—Peter H. Berrighin, Quincy, Mass. In this machine the pointers or chisels are designed to act automatically, simulating hand work, as are also the pene and bush hammers, in finishing the work. The devices carrying the chisels and pene and bush hammers are adjustable vertically to act on blocks of any desired thickness, and the stone while being cut rests on a truck which may be moved at a proper rate of speed or shifted sidewise to bring the block properly beneath the stone-cutting tools.

**TIRE UPSETTING MACHINE.**—Hans E. Oistad, Sioux Falls, South Dakota. To grip and hold the tire to be shrunk while the shrinking devices are being operated, without employing wedges, this machine is made with a frame having movable and fixed jaws to hold the tire, there being means for opening and closing the jaws and for moving them toward one another to effect the upsetting or shrinking. The part of the tire operated upon is substantially covered by the clamping devices, its bending being thus prevented and its shrinking insured.

**CLEANING BOLTING SIEVES.**—Daniel E. Burner and Maconius Shaner, Columbus, Ohio. In horizontal bolting sieves which have a gyrating motion, this invention provides a simple and inexpensive brush for cleaning the sieves. The body block of the brush comprises a number of radiating arms, and above the sieve are secured pins extending downward nearly to the bolting cloth. The brush is placed loosely on the sieve, whose gyrating movement causes the brush to bound back and forth between the frame and the pins, the pins directing the brush around the sieve.

**OIL WELL JACK POST.**—Charles V. Card, Mayburg, Pa. To enable the cap of the jack post to be conveniently removed at any time, or to facilitate its adjustment in case of wear, the cap bolts, passing through the cap and extending into recesses in the sides of the post, are formed with eyes which are engaged by a transverse bolt.

## Miscellaneous.

**GAS BURNER FOR STOVES.**—Peter Rohrbach, Brooklyn, N. Y. To convert an ordinary kitchen stove or range into a gas stove this inventor has devised a burner whose hollow base is adapted to be seated in the fire pot and connected by tubing with the gas supply, an upwardly extending burner tube having air inlet holes, while on this tube screws the burner head, consisting of a hollow cross piece terminating at each end in a hollow annular burner. These two annular burners are brought into the pot holes of the stove, and form a support for the various kitchen utensils.

**WEATHER STRIP AND DOOR STOP.**—Adolphus M. Doyle, Leoti, Kansas. A stop adapted for attachment to the door, according to this invention, is normally pressed downward by a spring, and a weather strip and pin are also pivotally connected with the door, the pin passing through the weather strip to engagement with the stop, and communicating the pressure from the spring controlling the stop to the weather strip. The device is inexpensive and readily applicable to a door, the stop and weather strip being operated together by means of the knob spindle.

**UMBRELLA CANE.**—Rufus Waples, Jr., New York City. This is an improvement on formerly patented inventions of the same inventor, providing an umbrella canopy which may be compactly folded and placed in a tubular cane, the cane forming a stick for the opened umbrella. The invention comprises a novel combination of cover, ribs and braces, with a guide sleeve secured at its inner end to the center of the cover and at its lower end with the inner ends of the stretcher, so that when the umbrella is open the sleeve will be crimped between the stretchers and the ribs.

**RIB TIP HOLDER FOR UMBRELLAS OR PARASOLS.**—Heyward Scudder, Northport, N. Y. This invention provides a superior clamp for removably holding the tips of umbrella ribs snugly against the stick, two semicircular clamp sections embracing the stick, each having a shank with a spring eye adapted to receive the terminals of a pin, and the eyes yielding to permit the movement of the sections on the pins and contracting to hold the sections at the desired adjustment.

**FURNITURE BASE.**—Jacob L. Stair, Altamont, Ill. This base has an outwardly movable section and a longitudinal guideway, the supported article pivotally engaging the base at its movable section and engaging the guideway of the fixed section, while the guideway has branches extending through the front of the base, permitting a complete revolution of the supported article. The improvement is especially designed for use with folding beds, bookcases, wardrobes, etc., permitting the swinging of such furniture near a wall without contacting with the wall.

**SWIVEL COUPLING.**—Brown Henley, Hillsville, Pa. This is an improvement on a former patented invention of the same inventor for a coupling particularly intended for use as a fifth wheel for vehicles, and also as a coupling for singletrees. The upper and lower parts, fitting together and rotating on each other, are connected by a clip which allows due rotary movement, and the clip has a bar that bears centrally on one of the parts and shanks which rigidly connect it with the other part.

**PATTERN PRODUCING APPARATUS.**—Felix Crakauer, Wiesbaden, Germany. This apparatus comprises a series of extensible outline strips having teeth or the like to produce an impression on the paper, while lazy tongs and adjusting devices are connected to the free ends of the strips to complete the outline of the pattern. The apparatus, adjusted according to the required measurements, automatically forms the outline of the pattern, and it may be transferred directly to the paper.

**PENCIL.**—Henry Hunt and Henry Hunt, Jr., Wilkesbarre, Pa. This pencil has a tubular

body to receive a lead, there being an eraser held in one end of the body, while on its other end fits a removable cap or clamping sleeve adapted to firmly hold the lead in adjusted position. Within the clamping sleeve is a spring metal band carrying clamping jaws to hold the lead and sleeve in place, the end of the lead being moved at pleasure as required. The device is designed to be simpler, cheaper and more convenient than various other forms of pencil.

**ARTIFICIAL LIMB.**—Samuel M. Kellum, Altman, Col. According to this invention the limb is composed of an inner and an outer socket section, the outer section having free movement on the inner one, and the latter having means for binding it closely to the natural limb or stump. A supporting belt from the waist has independent connections with both the inner and the outer socket sections, and the artificial limb proper cannot irritate the skin.

**BICYCLE AND TRICYCLE.**—William F. Williams, London, England. To promote the chest development of riders and enable other muscles to cooperate with those of the legs in propelling a machine, and also to enable the machine to be steered by the shoulders, this inventor has devised a combined shoulder support and steering device, there being combined with the steering fork spindle abutments or supports to resist the forward pressure of the shoulders, the supports being carried by a rod adjustable on a spindle parallel to the steering head, and coupled thereto by lever arms and links.

**PANORAMIC CAMERA.**—Horatio G. Wood, Newport, R. I. In this camera the driving mechanism is greatly simplified, and the camera can be used for making either panoramic views or ordinary views. On the fixed pivot for the camera casing is a stationary gear wheel, there being a pinion in mesh with the gear wheel, and a winding roller carrying the pinion being adapted to wind up the film after the exposure is made.

**FILTER.**—Alexander H. Wright, Stratford, Canada. For filtering cane juice and other liquids in an economical and thorough manner, this invention provides a casing mounted on hollow trunnions to form the inlet and outlet for the liquid to be filtered, a perforated plate supported above the bottom of the casing forming a space from which leads the outlet, and there being a removable cover for the casing. The liquid flows through the filter under pressure, and the filtering material consists of bagasse, straw, or other fiber, or fine gravel.

**GAS BURNER.**—George H. Parsons, St. Louis, Mo. This burner has an inner wall with openings in its side, and an outer casing with registering openings, and may be adjusted to furnish a blue flame with an intense heat and no smoke, after the manner of a Bunsen burner, or be adjusted to furnish light for illuminating purposes. It is designed also to support a cup or receptacle for heating liquid or to receive a glass globe.

**RIDING SADDLE.**—William C. and Jesse D. Padgett, Dallas, Texas. This saddle is an improvement on a former patented invention of one of the same inventors, and has a tree or frame formed of a short rigid fork and a flexible body or rear portion, including a seat and cantle of leather or other flexible material. The improvement provides for increasing the strength of the flexible portion without adding materially to its weight.

**FENCE WIRE STAY.**—Alfred J. Sloan, Clyde, N. Y. This stay is bent from a wire rod to be adapted to hook fast to the fence wires, hold them spaced, and have a locking device at each end of the stay which affords means for the detachable but secure connection of the ends of the stay with the upper and lower wires of the fence. The stay is light, strong, and inexpensive, and quickly attached or detached.

**STOVE.**—James P. Rasmusson and James Oliver, Tacoma, Washington. In sheet metal stoves for burning wood, this invention provides an airtight casing so made that the damper is securely held to its seat irrespective of the expansion and contraction of the metal. The damper casing has a depressed front in which a disk turns on a bolt, a pivoted weighted arm engaging the bolt to cause it to press the disk upon its seat, thus establishing a very tight joint.

**COUCH.**—Richard W. Wicks, Brooklyn, N. Y. This couch admits of placing the body in a reclining, upright, or partially upright position, and requires but slight exertion of the occupant to assume any desired position, when the couch will be automatically locked in such position. The couch has a head rest or pillow which follows the position of the head section of the couch when raised or lowered. The couch has a mattress of spring-supported slats or woven wire arranged to readily break at the point where the head section rises at an angle to the intermediate section of the bed frame.

**CLOTHES STICK.**—William J. Coakley, Rockland, Me. This is a laundry implement adapted to conveniently move about and change the position of the clothes in the boiler, and to facilitate removing the clothes. The invention comprises a slightly yielding head piece on the end of a handle lever, the head piece consisting of a removable barrel shaped shell composed of a series of longitudinal ribs, the head yielding enough to avoid punching holes in the clothing, and being also capable of resisting the action of boiling water.

**STRING FASTENER.**—Charles C. Pine, New York City. This is a device for use on shoes, corsets, gloves, etc., enabling the wearer to securely fasten the end of the string in a very simple manner. The fastener is preferably made of a single piece of sheet metal, and has a pronged back plate by which it is secured to the article on which it is applied. The device comprises two opposing plates connected by a cross bar, a tongue being arranged between the plates and extending along the circumference of one of them to engage the end of the string.

**NOTE.**—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

## Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion: about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

Marine Iron Works, Chicago. Catalogue free.

"E. S." metal polish. Indianapolis. Samples free.

Mariner & Hoskins, Assayers, 81 Clark St., Chicago.

W. Hoskins & Co., Assay Furnaces, 81 Clark St., Chicago.

Presses & Dies, Ferracute Mach. Co., Bridgeton, N. J.

Handle & Spoke Mchby. Ober Latbe Co., Chagrin Falls, O.

Send for cat. and sample copy. Open Court Pub. Co., Chicago.

Wanted to Purchase—a power machine to seed raisins in large quantities. Address R. C. S., Box 773, N. Y.

Screw machines, milling machines, and drill presses The Garvin Mach. Co., Laight and Canal Sts., New York.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Refrigerating Machine Company. Foot of East 188th Street, New York.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4, Munn & Co., publishers, 361 Broadway, N. Y.

Stay with your job, and with your wages pay installments for a profitable olive orchard. Booklet free. Whiting's Olive Colony, Byrne Building, Los Angeles, Cal.

More profitable than your business. Investigate Ransome's Concrete Construction. Easily learned. Liberal terms for exclusive rights. Ransome & Smith Co., 622 Boylston Bldg., Chicago.

Cripple Creek—Its History to Date, Illustrated.—Just out, with correct map and costly full page views of mines natural as life. This great book will be sent free prepaid with our big 56-col. family paper 3 months on trial for 25c. (stamps or silver); club of 6, \$1. Latest mining news. Mention the SCIENTIFIC AMERICAN and address Illustrated Weekly, Denver, Colo.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

## Notes &amp; Queries

## HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(6847) J. F. asks: Please send me a table or formulae for working out the amount of power consumed in the circuit upon which is placed a Thomson recording watt meter, 2 wire, 100 volts, as I have a meter in my house and I want to learn how to figure out how much I burn. A. The general principles of electric light metering are based on the assumed maintenance of a constant voltage and the registering of amperes by the meter. Then, by multiplication of meter reading by the voltage of the system, the watts are given. Three to four watts are required per candle power and 746 per horse power. The customer who buys light cares nothing about watts. A slight drop in voltage, while almost unappreciably diminishing the amperes and watts and scarcely affecting his bill, may cut his candle power down very seriously. A correct electric meter should register voltage as well as amperage. If a reduction of amperage reduces the bill in direct ratio, the reduction of voltage should reduce it in a very high ratio, if used for light; not if used for power. A correct power meter is not necessarily a correct light supply meter.

(6848) F. G. U. says: Please give me in SCIENTIFIC AMERICAN formula for bath to temper steel such as mill picks and rock drills. A. If cast steel is made white hot, it is spoiled; yet if a person takes a chisel, mill pick, or other pointed tool to be repaired, the smith pushes it into the fire. The point is soon white hot. They will now push it in and out of the fire a few times, and at last bring it out red hot and work it. Of course it is already spoiled; and no matter how low it is tempered, it is next to useless. Take one to the smith, and see that he puts the body of the tool in the fire, leaving the two thin ends uncovered till the middle is red hot. As soon as the middle is red hot pull back, and let the thin end just get a dull red heat. It must now be hammered edgewise first and flatways last of all. It is best to hammer it on the flat part of the anvil, as drawing steel on the edge of the anvil, although a great deal quicker, makes it short in the grain, and always causes the tool to break in the thinnest place. Serve the other end the same, only repeat as soon as it loses its dull red color. The lighter the blows in working steel, the tougher it is. The point should be quite as thin as a fitter's chipping chisel, only a little longer, then it will not require doing up so often. When the ends are drawn out, the middle will have lost its red heat. The ends can now be filed a little. Now to temper them. Heat them in the flame of the fire, using great care. When a very dull red heat, cool in rain water, with the chill taken off, about 3/4 inch from the end, and let down to a blue; if it should be too brittle, a little lower. Serve the other end the same. Cool all over. Grind the edge rather blunt, and for the first few blows hit as light as possible. The secret is in working it at a low heat as possible, only keep on repeating very often, and to hit it edgewise as little as possible, but flatways as much as you like.