

## ENGINEERING INVENTIONS.

A car truck has been patented by Mr. Charles E. Candee, of New York city. In combination with the axles are oscillating boxes and screw cylinders of novel construction and arrangement, to facilitate the travel of cars upon curves, so they may be carried around short curves without excessive wear upon the wheels or rails.

Feeding air to locomotive furnaces forms the subject of a patent issued to Mr. James N. Weaver, of Sayre, Pa. The invention covers apparatus by which air heated by the escaping products of the furnace, or by the steam, is introduced over the fire, a steam blast being also used to quicken the draught and improve combustion.

A car truck has been patented by Mr. James N. Hicks, of Marysville, Pa. The invention relates to sliding bolsters for intermediate trucks, the truck having a perforation in the bolster and body, the car having a slot in the beam and means for forming a sliding joint with the bolster, and the king bolt having a squared portion to fit in the slot.

A gas regulator has been patented by Mr. Chester S. King, of Smethport, Pa. This invention covers the combination with a regulator of a separate diaphragm nearer the source of supply, with a novel construction for regulating the flow of gas as it comes in very irregular degrees of force from natural wells, where the pressure varies widely.

A double acting pump has been patented by Mr. James McGwin, of Fulton, Mo. It has an inner and an outer cylinder, the inner one with piston and piston rod packed in its top, and at the bottom of the cylinder are three tubes, each with a valve, one of the tubes communicating with the inner cylinder, another with the outer, and a third with a vertical channel between the two cylinders, the device being more especially designed for artesian wells.

## MECHANICAL INVENTIONS.

A counter shaft has been patented by Mr. De Witt C. Cummings, of Carthage, Pa. The invention covers improvements, including an independent short shaft in line with the counter shaft, intended to secure a perfect and permanent alignment of the shaft in its bearings, to do away with the ordinary loose pulley, and to provide means for the better lubrication of the bearings.

A machine for dressing ship's sides has been patented by Mr. John Hamilton, of St. Johns, New Brunswick, Canada. It is a contrivance of machinery, whereby a rotary cutter or planer may be applied to and operated upon the sides of vessels, by a crank shaft to be operated by hand or by power, to dub and plane the sides better and faster than can ordinarily be done with hand tools.

A belt stretcher has been patented by Messrs. Garrison H. Jones, of Larwill, Ind., and James M. Chilcote, of Edgerton, Ohio. It is to take up the slack in belts without taking them from the pulleys, and covers a combination of head block with clamp, lugs with inclined planes, and wedges, the wedges being so introduced that the strain from the clamped ends tightens each wedge on the inclined planes, and the slack can be readily taken up.

A machine for forming scythes has been patented by Mr. Lucius C. Palmer, of Ballston Spa, N. Y. This invention combines, in a swaging machine, a reciprocating oscillating die with an adjustable bed die, with other improvements, for swaging scythe, corn knife, and other blades, in uniform shape from back to edge, and true taper from heel to point, making blades more uniform in thickness, and that will finish with less grinding, than those made by the hammering process.

## AGRICULTURAL INVENTIONS.

A potato digger has been patented by Mr. Baltus Freeman, of Factoryville, Pa. Two carriage frames are hinged together, the forward one carrying radial rods operated from the drive wheels to loosen the earth, and the rear one having an adjustable frame with a screen, whereby the potatoes are raised from the ground, separated from the soil, and delivered into a basket or bag.

## MISCELLANEOUS INVENTIONS.

A pump handle has been patented by Mr. James A. Craig, of Philadelphia, Pa. By this invention additional leverage is given, as compared with that of ordinary pumps, whereby water may be raised with facility from very deep wells.

A corpse head rest has been patented by Mr. John McGrath, of New York city. It consists of an elastic bar curved at its middle part, with a shorter one to fit the head and neck, the head rest being readily adjusted to hold without slipping.

An ironing table has been patented by Mr. Joseph H. Ritter, of Philadelphia, Pa. This is a novel design of folding table, so constructed that it can be compactly folded for storage and transportation, and which when arranged for use will be firm and stable.

A siphon starter has been patented by Mr. Eugene L. Fitch, of Des Moines, Iowa. This invention covers a special device for grasping and compressing the siphon tube, that can be so worked as to expel the air therefrom, and thus draw the siphon into action.

A fire escape has been patented by Mr. James Taylor, of New York city. It is intended more especially to improve appliances in connection with balcony fire escapes, and provides means whereby the ladders connecting the balconies can be more readily raised and lowered.

A handle for cross cut saws has been patented by Mr. Andrew Uren, of Seattle, Washington Ter. A single end handle is combined with an upright handle, both held firmly by one piece, and there is a rubber buffer or cushion to prevent damage to the saw or handle.

A axle bevel has been patented by Mr. Francis W. Flynn, of Woodstock, Conn. This is a convenient and accurate instrument of novel construction for setting and truing axles, giving the required set and gather, according to the diameter and dish of the wheel.

A vehicle axle cutter has been patented by Mr. Austin N. Ruiter, of Abercorn, Quebec, Canada. This invention covers a machine which, instead of revolving about the axle, is secured thereon, and combines in one instrument an axle cutter and a thread cutter, to cut either a right or left hand thread.

A door securer has been patented by Mr. Edward P. Conner, of Santa Rosa, Cal. It is a combined door lock and tool, with a flange which can be forced into the rabbet of a door, and the hammer head turned to act as a bolt, and can be used likewise as a screw driver and for drawing tacks.

A plaque and panel has been patented by Mr. Louis A. De Planque, of Jersey City, N. J. It is made of leather board shaped and provided with a coating of glue and whitening, and then having one or more coats of paint, being made very easily, taking a good finish, and not being expensive.

A nail holding attachment for hammers has been patented by Mr. George F. Barber, of De Kalb, Ill. It consists of a convenient appendage to hand hammers for holding and starting nails when only one hand can be used, or, where the work is out of reach by the hand, to hold the nail at starting.

A type writing machine has been patented by Mr. Darien W. Dodson, of Town Line, Pa. The invention covers a novel construction and arrangement of a machine that is very compact, can write rapidly, in which the keys are but slightly depressed, and which exhibits the wholesheet as fast as written.

A wrought iron fence post has been patented by Mr. Jacob G. German, of St. Mary's, Ontario, Canada. A vertical rod forms the post, having feet and notches to receive fence wires and lateral braces with eyes to receive the rod, all of novel design, and the posts and braces being so made that they can be anchored by placing stones on their feet.

A process for washing and purifying salt has been patented by Mr. Samuel S. Garrigues, of Ann Arbor, Mich. The salt is first placed in storage bins with perforated bottoms, then washed with a solution of three parts water to one of pure salt, the solution percolating through the salt and the perforated bottoms.

A drip pan for sewing machines has been patented by Mr. William Connolly, of South Norwalk, Conn. It is intended to save the oil dropping from the working parts of a machine, and has an inclined bottom with a strainer and discharge neck, on which a cup may be fixed in which the dripping oil will be collected.

A vehicle wheel has been patented by Mr. James J. Bush, of Tacoma, Washington Ter. This invention covers improvements on a former patented invention of the same patentee, providing increased facility for adjusting the wheel to its tire from time to time, or for putting on a tire or replacing the spokes of a wheel when necessary.

A combined wheelbarrow and sled has been patented by Mr. Franklin B. Kendall, of Tumwater, Washington Ter. The sides of the barrow are constructed to run either end first when the vehicle is converted into a sled, and it is provided with metal shoes or runners, in combination with a removable wheel and detachable legs.

A harness buckle has been patented by Mr. James A. Gavitt, of Walla Walla, Washington Ter. The invention consists of a peculiar construction of the buckle frame and the means for connecting it to the same tugs, making a strong connection while affording great facility for connecting and disconnecting the same.

An ore sampling machine has been patented by Mr. Thomas T. Eyre, of Decatur, Col. It consists of a hopper or receptacle with a hole in the bottom for the ore to discharge from, means for stirring the ore, and for dividing it while running, so that ore, earths, chemicals, seeds, etc., may be divided into equal parts quickly and automatically.

A type writing machine has been patented by Messrs. George H. Herrington and David G. Millison, of Wichita, Kansas. It is a simple and inexpensive machine for printing words and sentences for the amusement and instruction of children, and so simple that a child can easily use it to acquire a knowledge of spelling, composing, and punctuating.

A sardine can has been patented by Mr. Julius Wolff, of New York city. Its top or bottom, or both, are made concave, and secured within the body of the can, so the operations of punching to allow the air to escape, and then closing the punctures, are avoided, and the improved cans serve as a test to show whether the soldering has been properly done.

An album satchel has been patented by Mr. Louis Lazarus, of Allegheny, Pa. The invention has for its object to provide a convenient receptacle for carrying articles of convenience for travelers, three or more boxes being provided with partitions, each having two or more hinges, hooks, pins, elastic straps, etc., all combined in the form of a substantial satchel.

A skid holder has been patented by Mr. John D. Coppes, of Nappanee, Ind. It is a device for holding skids on wagon wheels in loading wagons with logs, and is adapted to be hung on the end of a bolster supported on a wheel; it has projections between which the end of the skid is to be placed to prevent it from slipping off the wheel.

A self-adjusting match box holder has been patented by Mr. Henry W. Beeuwkes, Jr., of Paterson, N. J. The holder is a saucer shaped dish, in which the match box is so held that the matches can be readily taken out, and the empty box readily detached and replaced with a full one, the bottom of the dish forming a receptacle for burned matches and cigar ends.

A jacketed oleomargarine churn has been patented by Mr. Samuel Schwarzschild, of New York

city. Its construction is such that the oils can be melted by steam or hot water admitted to the jacket, and will then be finely divided and mingled with each other and with milk or cream by the revolution of screens, the said substances being caused to pass through the meshes of the screens.

A feathering paddle wheel has been patented by Mr. Michael H. Depue, of Homer, Ill. The invention covers a novel construction designed to give the desired direction to the planes of paddles at all points of the revolution, and is intended primarily as a propeller for a flying machine, although the same principle may be adopted for boat propulsion, windmills, and current water wheels.

A faucet has been patented by Mr. Frank McCabe, of Providence, R. I. The object of the invention is to swivel the screw spindle operating the valve to a ring or washer between the screw cap and a shoulder of the tube in which the spindle works, thus increasing the durability of the packing, and subjecting it to less wear than when the packing is attached to the rotating spindle.

The manufacture of enameled brick forms the subject of a patent issued to Mr. Charles Newton, of Council Bluffs, Iowa. The invention covers a novel process of making front brick by pressing on or into the surface of ordinary front brick Portland or hydraulic cement of any suitable description, and of different colors, and hardening the same over streams of carbonic acid gas.

A key board attachment for musical instruments has been patented by Mr. Edward F. O'Neill, of Storm Lake, Iowa. This invention is an improvement on a former patent issued to the same patentee, and consists in the combination, with a series of false keys binged to a strip, of a frame adapted to rest on the strip and the front of the instrument, carrying rollers over which an endless music band passes in such manner as to depress the keys and make the desired melody.

A two wheeled vehicle has been patented by Mr. John C. Bach, of Hillsdale, Mich. This invention relates to carts in which the forward part of the body is suspended by a single spring from the front cross bar, and the spring is clipped loosely to the body at the bow, and extended therefrom a suitable distance downward and forward to a stud bolt projecting from the bottom of the body through an eye in the end of the spring.

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## Special.

## CONVENTION FOR THE PROTECTION OF INVENTORS.

The most ancient and respectable Patent Office in France, that of M. Maurice Sautter, of Paris, has just issued a circular giving interesting information concerning the International Convention for Protection of Industrial Property as agreed upon between eleven States and assented to by Great Britain, which is about being put in force. The great advantages offered thereby to foreign inventors belonging to the States of the Union are such as to make it worthy the U. S. Government to inform quickly as to advisability of joining the Union. We notice chiefly, as far as French patents are concerned, the two following points:

"Inventors are all aware of the extreme rigor of the French law, when defusing (Art. 31) the novelty required to render an invention patentable in France. The effect of the actual legislation is that the mere fact of the description of the invention being open to public inspection in any part of the world, at any time anterior to the lodging of the French application, imperils the French patent.

"Article 4 of the Convention determines, on this point, that an inventor, who has protected his invention in one of the States of the Union, is allowed a period of six months, extended to seven for beyond-sea States, for procuring protection in the other States of the Union, without injury to said protections from intervening applications, exploitation, or publication by third parties."

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Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

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Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) F. B. J. asks: 1. Is it usual for steamships or large screw wheel tow boats with compound engines to have a cut-off on the low pressure cylinder? A. A cut-off on low pressure cylinder is quite common on large ocean going screw steamers, but not on tug boats. 2. With a compound engine do you consider it practical to use a large steam chest on the low pressure