

## ENGINEERING INVENTIONS.

A dumping car has been patented by Mr. Terrence Reynolds, of Atalla, Ala. This invention covers a tilting platform journaled at points a little in front of its center to a stationary frame, worked by various special arrangements and devices, to facilitate the unloading of cars in mines and other places where loads are to be dumped.

An amalgamator has been patented by Mr. Edward Pike, of Salt Lake City, Utah. The invention provides for a sluice box with opposite riffles, faced with amalgamated plates, and connected with wires leading to a generator of electricity, in order to save fine gold, floured quicksilver, and amalgam, and facilitate the concentration of ores and gold and silver tailings.

An ore concentrator has been patented by Mr. John L. Loomis, of Leadville, Col. Inclined sluices are made to abruptly change the course of the current at numerous intervals, combined with which are water pipes having jet orifices or tubes to increase the volume of water in the sluices and disturb the pulp in the current, thus facilitating the separation of the ore from the lighter accompanying particles.

A car coupling has been patented by Mr. William M. Robinson, of New Franklin, Mo. In combination with a drawhead is a side pivoted lever, with a laterally moving coupling pin held in the front end of the lever, the inner end of the lever being connected with a sliding vertical bar in the drawhead, this vertical bar being connected with a pivoted lever for moving the bar to the front to uncouple the drawheads.

A car coupling has been patented by Mr. John Mealey, of Prescott, Ontario, Canada. Each drawhead has one hook and one socket, the hooks being always in the same side, so the couplings will match when two cars run together; the device may also be made to work with the ordinary link and pin coupling, when cars of other systems are used, and there are various special novel features for making an automatic coupling.

A car brake and starter has been patented by Mr. Frank Tompkins, of New York city. Combined with the front axle of the car is a ribbed wheel on the axle, with sliding sleeves, the latter having ribbed disks to engage with the ribbed wheel, chains on these sleeves being connected with an air compressing piston in a cylinder, a rack connected with the piston engaging with a ratchet wheel on the rear axle for revolving it when the piston is forced outward by the compressed air, thus using the energy stored in braking to help start the car.

A process of and apparatus for producing heating gas has been patented by Mr. Herman Haug, of Dortmund, Prussia, Germany. The essential principle of the invention is that the quantity and intensity of heat necessary are produced principally by superheating to a high degree the converting agent, which may be steam or carbonic acid, or mixtures of them with air or with combustible gas, while the crude carbonaceous material contained in a converting chamber may at the same time be heated through the walls of this chamber.

## MECHANICAL INVENTIONS.

A pipe wrench has been patented by Mr. Conrad D. Volkmann and William F. Paddyord, of Napanee, Ind. This invention relates to that class of wrenches in which a toothed body piece is opposed by a self-adjusting hook, and makes a wrench that is strong and reliable, suitable for use on large and small pipes, and adapted to take hold of short pipe nipples.

A grinding mill has been patented by Mr. Charles C. Burner, of Traveler's Repose, W. Va. This invention is for mills used for grinding apples to pomace preparatory to making cider, and provides for the cogs being slid out and in with mechanical certainty and ease, their mortises kept clear, and the apples being gradually reduced to the fineness required.

A polishing wheel has been patented by Mr. Daniel W. Abbott, of Leetonia, Ohio. It is proposed to make the wheels without central holes for the mandrels, so purchasers may readily fit them to the mandrels in use; the plan for securing the leather is simple and efficient, and the wheels may be cheaply made, either for roughing purposes or smoothing and polishing.

A rag engine for paper making has been patented by Mr. William Whitely, of Housatonic, Mass. This invention covers, in part, improvements on former letters patent issued to the same inventor, and the lighter supporting posts are made in two parts, connected by bolts, so the upper parts can be conveniently detached to give easy access to the ends of the lighters, and allow them to be easily removed, with various other devices to facilitate the leveling and adjusting of the rolls.

A saw set has been patented by Mr. George A. F. Clayton, of Masonville, Va. The invention consists of an inclined bed plate with an angular face, on which the teeth of the saw are to be bent, over which is a die for bending them, arranged on a pivot, and with a spring to raise and hold it for adjusting the saw; over the die, also, is a press screw with great pitch, with weighted lever handles, to work quickly and set the teeth accurately, the whole being readily attachable to a bench or other support.

## MISCELLANEOUS INVENTIONS.

An automatic fan has been patented by Mr. Logan W. Everhart, of Parsons, Kansas. It is operated by clock mechanism or by a rubber spring, and may be suspended from a ceiling, to be easily raised or lowered to suit convenience.

A meat clamp has been patented by Mr. Joseph H. Tabony, of New Orleans, La. It is a device adapted to be attached to a butcher's bench, or to a small bench to be set on a table, to hold hams or other meat, and thus promote convenience in slicing.

A composition of matter for giving a metallic surface to paper has been patented by Mr. Julius Fransecky, of East New York, N. Y. It consists of

argentine, vermilion, silver bronze, etc., in certain definite proportions, applied in a specified manner, whereby a coating and metallic luster are given.

A lock for wagon end gates has been patented by Mr. Andrew Sproul, of Hannibal, Mo. A rod is held to turn on the outer surface of the end gate, the ends of the rod being bent over the ends of the gate, and adapted to engage with studs projecting from the side boards of the box.

A vehicle spring has been patented by Mr. Willard S. Everett, of Hyde Park, Mass. This invention covers a new form of spring, arranged in elliptical or circular form, with an ordinary or diamond shaped or semi-diamond shaped base, thus combining in one spring the action of the two forms of springs.

A flour refiner has been patented by Mr. Isaac Morgan, of St. Louis, Mo. Within a suitable casing are a rotary shaft, suction fan, agitators, conical feeder, and various special arrangements, for separating impurities as the flour is fed in and drawn through the machine.

A spring shade roller has been patented by Mr. Gideon B. Massey, of Mount Vernon, N. Y. It is so constructed that when the shade is suddenly released the roller will be checked, and will be prevented from winding up the shade too far, as is now commonly the case with ordinary spring rollers.

A hold back for pole irons of wagons has been patented by Mr. William D. Hatch, of Olean, N. Y. The invention covers a novel construction and combination whereby the pole iron is protected from wear and prevented from cutting into the pole by the pull of the neck yoke ring on the hold back.

A street car fare box has been patented by Mr. Gustave S. De Blanc, of New Orleans, La. Combined with a fare box having an orifice or chute for receiving the fare is a bell or gong so placed as to be struck by the money as it drops, thus giving an audible signal to the driver and passengers.

An improved gate has been patented by Messrs. Josiah Austin and Roscoe Chamberlain, of East Liberty, Ohio. This invention covers improvements on automatic gates formerly patented by the same inventors, by which a quicker movement is obtained, and the gate is operated with greater facility.

A portable apparatus for heating mineral water in bottles or flasks has been patented by Mr. Edwin D. Newton, of New York city. The invention covers a special construction of apparatus whereby the necessary heat may be readily obtained from a lamp or gas burner, and regulated by a thermometer, so that any desired temperature may be maintained.

A device for thawing out sink spouts has been patented by Mr. John G. Coburn, of South Carthage, Me. In combination with a hot water pipe, end threaded on the outside, is a cup and internally threaded case, the cup screwing on the pipe and the case on the cup, to facilitate the pouring of hot water into sink pipes for thawing them out.

A multichambered bottle has been patented by Mr. Edwin D. Newton, of New York city. The bottle has one or more thermic chambers, each with an orifice at its lower end to introduce hot water or a heating fluid, with passages at the upper end for the escape of air, the thermic chambers being surrounded by fluid chambers for rapidly and uniformly heating the fluid.

A wagon tongue support has been patented by Mr. William P. Martin, of Chico, Cal. Brackets are so arranged with a rod, sheave, chain, and hook, as to make a simple pole support, wholly removing the weight of the tongue from the necks of the horses, and it may be disconnected readily when it is desired to let the tongue or pole down on the ground.

A nest box for fowls has been patented by Mr. William Z. Allen, of Monrovia, Ind. The object of the invention is to prevent hens while on their nests from being annoyed by other hens, or by rats, weasels, or other animals, a balanced nest being combined with and operating a hinged door, with which is connected a vertically sliding locking bolt.

A cooking stove has been patented by Mr. Ernst J. Krause, of Carlisle, Pa. A detachable partition plate, in combination with a horizontal step plate, is so arranged as to check and control the fire, by reducing the capacity of the fire pot, so as to limit the heat to the smaller requirements of a stove for summer use.

A breech-loading fire arm has been patented by Messrs. Pius and Charles Kaul, of Lancaster, Pa. This invention covers a novel construction in which the breech is opened and closed by means of a vertically sliding block, a lever being adapted to pull down the block and cock the hammer by a single downward or rearward movement.

A folding table has been patented by Mr. John McGrath, of New York city. It has hinged legs connected in pairs by cross bars, and held in place by spring pressed brackets, so the legs will be held both folded and unfolded, for convenience in storage and transportation, and when opened for use the table will be firm and rigid.

A flying target has been patented by Mr. Charles F. Stock, of Peoria, Ill. This invention consists in providing that class of targets known as "clay pigeons" with a separate re-enforcement of paper, leather, or wood, applied to the edge or flange, so the target may be made very thin and fragile, and yet thrown from the trap without breaking.

A dust pan has been patented by Mr. Salathiel C. Sweetson, of Island Falls, Me. It is formed of sheet metal, with its side edges bent to form flanges, one higher than the other, the lower flange having its lap edge beveled from rear to front, so that it can be used for cleaning dust out of angles, and dropping the same into small openings in a stove.

A tool for raising sucker rods from wells has been patented by Mr. Marvin Newton, of Knapp's Creek, N. Y. The tube is made of spring metal, and has a slit so that the lower end of the metal will spring outwardly when passing a joint, its lower edge being formed as a steel cutter, so that it will pass around the pump rod, and cut off straps or rivets that may project.

A skidway has been patented by Mr. Joshua L. Given, of Philadelphia, Pa. The invention covers a special construction of skids, their lower ends to rest on a floor and their upper ends on a flight of stairs, shaped midway in a curve to which the two ends are tangent, to facilitate the sliding of merchandise from one story of a building to another.

A wind engine has been patented by Mr. David H. Bausman, of Lancaster, Pa. In combination with a horizontal wind wheel is an independent shield partly surrounding it, a vane connected therewith with a joint between the ends, devices for giving the parts of the vane the desired inclination to each other, with other devices, to make a simple and self-regulating wind engine.

A combined cotton chopper and scraper has been patented by Messrs. Samuel A. Myers and John J. Kelly, of Memphis, Tenn. This invention covers a special construction and combination of parts to facilitate the chopping of cotton plants to a stand, and the scraping of the rows of plants, and also to promote convenience in adjusting and controlling chopping and scraping machines.

A thermo-reservoir has been patented by Mr. Edwin D. Newton, of New York city. The invention covers a vessel adapted to hold hot water, with a coil extending downward from an upper vessel, the latter having at its lower end a cock projecting from the hot water vessel, so that mineral water stored in the upper vessel is heated by passing through the coil, the heating water being heated in a separate vessel.

A top for children's carriages has been patented by Messrs. Uriah McClintch, of New York, and Jay F. Butler, of Williamsburg, N. Y. The invention covers a many angled bearing attachment to the parasol or canopy, in connection with a suitable locking device, thus making a clamp to hold the canopy in position on the rod or support which runs up from the carriage.

A piano-forte frame has been patented by Mr. Henry Kroeger, of New York city. Along all the edges of the back are bearing surfaces for the sounding board, and the frame has in one corner a triangular part with its inner surface flush with the bearing surfaces for the sounding board, the object being to promote the making of full, strong, and rich tones on the instrument.

An improved upper plate of copying presses has been patented by Mr. Henry N. Hubbard, of New York city. The water bowl is made in a convenient position on the top of the upper plate of the press, and the central boss socket for the screw of the press is strengthened by being formed on the face of the water receptacle, the upper plate, the bowl, and the socket being all cast in one piece.

An improvement in hand shears has been patented by Mr. Karl Witte, of Hartford, Conn. The invention covers an improvement on former letters patent issued to the same inventor, providing the handle loop for receiving the fingers with a lining of soft rubber or other material, and the handle for the thumb with a hard or soft rubber bow, for allowing a firmer grip without chafing the fingers.

An envelope for currency, checks, etc., has been patented by Mr. Charles A. Ball, of Delphos, O. A slotted metal strap and a covering or wrapper with an opening over the slotted part are so arranged as to make a convenient package for currency, notes, checks, etc., for shipment by express or otherwise, so the contents of the package can be counted without opening or withdrawing the bills.

A calcimeter, for treating cane juices in the manufacture of sugar, has been patented by Mr. Lucas M. Campi, of Havana, Cuba. The invention covers a longitudinal lime receptacle, graduated, and with a slide and screw, to enable any person, skilled or unskilled, to use the exact quantity required to clarify or defecate the cane juice, without having it a matter of chance or guesswork, as heretofore.

An irrigating apparatus has been patented by Mr. William R. Chisholm, of Laredo, Texas. An inner water pipe has nozzles projecting from its inner and outer surfaces, in combination with an outer pipe or casing inclosing the outer ends of the nozzles, the outer pipe having water passages in its ends, and the apertures varying in size according to the head of water, the whole making an apparatus not likely to choke up.

A saw has been patented by Mr. Walter Peak, of Peakville, N. Y. The teeth of the saw blade are made vertical upon their forward edge, with a cutting edge made by inclining their backs at an angle of forty-five degrees, their forward edges having V-shaped grooves, and in swaging the ends are thus formed outwardly, thus making a tooth that cuts both ends of the kernel at once, and will take out the kerf, clearing itself better than the common types of saws.

A rudder holder and support has been patented by Mr. Charles A. Richardson, of Alpena, Mich. A bed plate is fixed to the vessel and a collar on the rudder post, tongued and grooved together to hold the rudder firmly in place while permitting its easy movement, and so the post and its casing are protected from wear and leakage, and the lower bearing shoe of the rudder is or may be relieved of downward strain by the weight of the rudder.

A vacuum pan has been patented by Mr. Lucas M. Campi, of Havana, Cuba. This invention covers such construction of the dome and receiver that a steam and air tight joint may be formed between them, with various improvements in construction, so the evaporating of cane juice will be greatly accelerated, the operation be almost continuous, and the juice so evaporated down that in cooling the whole mass will crystallize, leaving practically no molasses.

A lime kiln has been patented by Mr. Bernhard Albers, of Conception, Mo. The base of the chamber of the kiln has rounded convergent shoulders, the chamber having ledges below the outer edges of these shoulders, upon which is supported a fire grate, thus providing a more effective combustion of fuel mixed with limestone than is obtained where the fire bed extends over the whole area of the chamber on the floor of the kiln.

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