

ENGINEERING INVENTIONS.

A car brake of simple device has been patented by Messrs. Alden D. Kiborn and William F. Smith, of Tucson, Ariz. Between the brake beams on car trucks the connecting rod is provided with springs so arranged as to produce an elastic connection between the forward and rear brakes.

An improved car coupling has been patented by Mr. Edward S. Carter, of Keokuk, Ia. The invention consists in a coupling loop or link which is arched upward in the direction of its length, one end of the link being secured upon a shaft, so that the points of bearing are confined to the pin beads, and the loop is applied to the drawhead without providing a flat surface for the link, as is required in the ordinary coupling.

An improved car coupling has been patented by Mr. Asa Kenton Owen, of Tennessee, Ill. The invention consists in a drawhead having a recess in the upper surface, and a raised outer end provided with a vertical recess. A transverse rod passes through the drawhead and through the slot in the disk, and has a plate or block which is in the slot, so that the arm will be swung when the transverse rod is turned.

Mr. Ross B. Meeker, of Sandford's Corners, N. Y., has patented an improvement which relates to the laying of the rails on railroads. The invention consists of metal ties, stay bars, and joint connections contrived for dispensing entirely with the wood ties now in use. These are of a more substantial and durable construction, and may be adjusted to the rail quite readily.

A noiseless and durable railroad frog has been patented by Mr. William H. Waters, of Muskegon, Mich., which consists in a filling of cast metal applied between the side rails of the frog and around the point by pouring the molten metal so that the block fits snugly beneath the heads of the guard rails and to the flanges, and is thus retained securely in place. The metal becomes chill hardened by the surrounding iron and becomes immovable, consequently there is no rattle when the train is passing over the frog.

Messrs. Dudley W. Haines and Alwyn D. Hankerson, of Readfield, Me., have patented a car coupling of novel and useful construction. By the improvement just patented the brakeman is able to couple and uncouple from either side or top of the car without passing between the cars when being brought together, thus avoiding the danger of being crushed. When it is desired to connect two cars, the coupling pin is raised by a crank attachment operated by a chain, one end of which is secured to the corner of the car, and the other end to the crank which raises the pin.

An improved rock drill of light, simple, but durable construction has been patented by Mr. William J. Barber, of Covington, Ind. It consists of a screw threaded drill rod mounted upon a firmly planted tripod, and connected with it is a cam wheel furnished with a handle for turning the same, by means of which wheel the drill rod is elevated in the air and then suddenly permitted to fall, and at the same time the drill rod is rotated upon its axis. As the hole is deepened the drill is readjusted on the rod, so as to reach deeper in the drill hole.

An improved combustion chamber for steam boilers has been patented by Mr. James Scott, of Pittsburgh, Pa. The invention consists of a combustion chamber supplied with gases from a blast furnace using either coke, coal, or charcoal, and as soon as the chamber becomes heated, air is forced by a blower into the combustion chamber. The air passing through the passages to the chamber becomes highly heated and mingles with the gases in the best possible conditions for promoting combustion. In this manner the heated gases are utilized, and it is claimed that no solid fuel is required to maintain combustion.

A system of transporting cars on a single track elevated above the ground is the subject of a patent issued to Charles F. M. Lartigue, Paris, France. The invention consists of a light rail mounted upon a frame, which is firmly planted in the ground. Upon this rail the car is made to run, which is constructed of light metal and mounted upon two wheels, and which carries the panniers of the wagon on each side. The object of the invention is to provide a cheap and simple method of transporting merchandise and troops, and is especially applicable to removing coal and ores from mines.

An improved tipping wagon has been patented by Mr. Henry Grafton, of London, England. The wagon is of such construction that the truck may be tipped at either side (or end, as the case may be) and the truck body may be given a combined movement of translation and oscillation, whereby the load may be discharged quite clear of the rails, and even to a greater distance therefrom than is possible with an ordinary pivoted truck of the same height and form of body, the tipping and righting of the body being an easy operation, requiring no gear liable to be fouled by dirt or to get out of order with rough usage.

An improved propeller, the object of which is to afford a simple arrangement of the blades by which the vessel may be steered in case of injury of the steering apparatus, has been patented by Mr. Ephraim Shay, of Haring, Mich. The invention consists in the combination with a tube, situated within the stern of the hull of a vessel and open on each side, of a gearing apparatus operated by a shaft, by which are set in motion two propellers fixed on oppositely rotating shafts, whereby the two propellers will move in opposite directions, but co-operate always to force the water in the same direction.

An improved caloric engine has been patented by Mr. Thomas Beesley, of Muscatine, Ia. This invention relates to the application of force generated by expansion of air and water by electric currents, this force being utilized for action on a piston fitted for reciprocation in a cylinder. For heating and expanding the air and converting the water to steam, an electric arc is used inside the generating chamber. The combining of a pump for supplying water in jets, and a pump for supplying air, with a generating chamber, heated by an electric current for producing expansion of the air, and conversion of the water to steam, comprises the prime feature of the invention.

A novel car coupling has been patented by Mr. George A. Cline, of Philadelphia, Pa., which consists in a drawhead in which is pivoted a U-shaped piece having a long and a short shank, provided with hooks at the ends. The U-shaped piece is pressed in the direction in which the books project by a spring acting on its rear end, whereby, when two drawheads strike together, the hooks will catch on each other and couple the cars automatically. If the cars are to be uncoupled, the hooks of the U-shaped piece are moved from each other by turning shafts provided with cam-lugs which act on wings at the rear ends of the pivoted U-shaped pieces, and thus press these pieces in the inverse direction of that in which they are pressed by the springs, and permit them to be disengaged.

Mr. Leo Ehrlich, of St. Louis, Mo., has patented a portable transfer track for street railroads, the object of which is to provide means for enabling a car to "skirt" or pass around any obstruction on the road without the necessity of jumping the track. The invention is designed more particularly for street cars, whose travel is frequently arrested by the breaking down of heavy vehicles on the track, but it may be used upon steam railways, in transferring cars from one track to another, or from a track to a siding without the necessity of running to a switch. To accomplish this a pair of skid rails with tapering ends for each track and a set of transfer rails are provided, to span the skid rails. Upon these rails platform truck frames are placed to support the car which is being transferred from one track to the other.

A stock car of improved form has been patented by Mr. Adolph V. Anderson, of Virginia City, Nevada. The invention consists in a stock car with extension partitions forming stalls, and having at the top feed compartments provided with discharge tubes, and at the ends water tanks, provided with discharge pipes and faucets, so that the feed and water will be discharged into feed boxes and water troughs in the stalls in a most effective manner. The rear ends of the stalls are separated by bars hinged to the car frame, and engaging with the edges of the extension partitions to prevent the animals from backing into adjacent stalls. To the feed box bottom is attached an arm, which is connected by a bar with the pivoted bars of the extension partition, so that the bottom of the feed box will be swung up and down by the extension and contraction of the said partition. The water troughs are hung upon sliding plates connected by rods provided with levers which are pivoted to the car frame, and connected with the water discharging faucets, held up by springs, so that the variation in the amount of water in the troughs will operate the faucets to admit and shut off the supply. The cars are connected by flexible pipes and valves, so that the tanks of all the cars in the train can be filled from one car or source.

MECHANICAL INVENTIONS.

Mr. David G. Wyeth, of Newark, O., has patented improvements in buggy tops, the principal advantages of which rest in placing the braces inside the top, rendering it easy for the occupant to open or close the top without leaving his seat.

An improved fanning apparatus for cooling the atmosphere in rooms has been patented by Mr. Jacob Reimers, of Davenport, Ia. The invention consists of a series of fan wings or blades mounted on a rotary shaft, and contained within a casing which is provided with a series of tubular arms or pipes for conducting the air in different directions.

A simple wire twister has been patented by Messrs. Axel L. Sjolinder and Emanuel Larson, of South Pueblo, Col. It consists of a baseplate having a concave channel on its lower side, through which passes the wire to be twisted, and with a slotted cylindrical twister located in the middle of the channel, which is operated by beveled pinion wheels turned by a crank.

A fish trap has recently been patented by Mr. James M. Frazer, of Portland, Ore. The invention consists in a trap or cage having converging rows of staple shaped bars affixed to an upright frame, the cage or trap being elevated or lowered by any of the known means. A lead net having a mouth, which is held against the action of the current conducts the fishes into the trap.

An adjustable saw guide, designed to do away with the ordinary and dangerous mode of setting or guiding circular saws, has been patented by Mr. Hiram Carman, of Portland, Pa. By the ordinary method the saws are guided while in motion by means of two set screws—one on each side—carried by stationary jaws. In this improved guide the jaws are made adjustable by means of a screw, so that they can be moved to guide the saw while the saw is in motion without danger to the Sawyer.

An improved trap for preventing foul gases from rising in waste pipes has been patented by Mr. Herman Pietsch, of Flatbush, N. Y. The invention consists in a trap formed of two vessels, one contained within the other. Into the inner vessel an inlet pipe projects from the top of the outer vessel, which inlet pipe is provided with an outwardly projecting spout or collar, whereby, when the suction in the soil pipe is too great, the valve opens and admits air, thus preventing the siphoning out of the water in the inner vessel of the trap.

Mr. Peter Straith, of Toronto, Canada, has recently patented a machine for sharpening the knives of reapers and mowers. In use the cutter bar is held by an adjustable frame constructed so that the bar can be turned back from the stone. Devices are also provided whereby the cutters are given an oscillating movement upon the stone. On the axle of the grindstone a pinion meshes into the driving pinion, which is so proportioned and arranged that the knife cannot reverse its movement on the stone in one place more than once, thus insuring an even wear upon the stone.

An improved washing machine has been patented by John F. Adams, of Eliza, Ill. The invention consists of a tub lined with galvanized sheet iron, and furnished with a lower and upper set of rubbers and a lever by which these several rubbers are operated

at once. The clothes to be washed are placed between the upper and lower rubbers. Then by working the lever horizontally the clothes will be forced between the rubbers. By working the lever vertically the clothes are pounded, so that the washing is done quickly and thoroughly.

An improved shutter worker, arranged in such a way that window blinds and shutters may be controlled from the interior of the building, has been patented by Mr. John W. Harrison, of Wheeling, W. Va. The invention consists in a shaft passing through the wall and operating bevel pinion wheels which connect this shaft with the hinge of the blind, and by which the blind may be brought into any position required by turning the handle attached to the shaft from the inside of the house. Devices are likewise furnished for holding the blind in the position desired.

A novel window shutter opener has been patented by Messrs. John J. Donahoe and Peter J. Finn, of New Orleans, La. By this arrangement the shutter is fastened by a pin, and is operated by a rod which is suspended to a lever. The lever of each window is attached by a rod to another longer lever, which is so adjusted that the operator by pulling upon a single rod detaches the fastenings of all the shutters on one side of a building by one operation. Springs are arranged between the shutter and window sill for forcing the shutter open when the pin is withdrawn.

An improved lathe for turning ovals, hat blocks, etc., has been patented by Mr. Michael Quinn, of Fishkill Landing, N. Y. The invention consists in a lathe constructed with a shaft carrying a stationary plate, and an adjustable eccentric plate, also a plate carrying a work holding plate, and provided with flanges to receive and slide upon the adjustable plate provided with flanges to receive and slide upon a bar connected with a pulley which revolves upon the stationary shaft. The work holding plate is thus made to slide back and forth as it is rotated.

Mr. Charles E. Brennan, of Charlottesville, Va., has recently patented an automatic fire extinguisher, the object of which is to provide an apparatus that shall be brought into operation automatically when a fire occurs in a building or other place contiguous to the machine. In case a fire occurs in a room, as soon as the temperature reaches a high enough point to fuse metal, a weight and lever will thereby be released, and falling opens a valve which connects with the pipes for conveying water from the tank or reservoir. The pipes are provided with sprinkling attachment and extend around the room. The moment the valve is relieved by the fusible metal the water commences to flow through the sprinklers about the room, and thus the fire is subdued.

A novel rice hulling machine has been patented by Mr. William C. Howard, of Grahamville, S. C. The invention consists of a stone mounted on a platform which may be elevated or depressed by weighted levers attached to the platform, their fulcrum resting on the frame which supports the machine. The stone is concave in its upper side, and in it revolves a wood cylinder faced with steel plates which answer the double purpose of feeding the rice to the stone and hulling the kernel of its chaff. Between the cylinder and the steel plates strips of India-rubber are interposed, which allow the plates to yield to the rice under treatment. The object of the adjusting weights is to regulate the pressure upon the rice as it is being fed between the cylinder and stone.

Mr. William A. Allen, of Jersey City, N. J., has patented an improved drying house or kiln. The improvements relate to kilns for drying kindling wood material in mass, and particularly the slabs or refuse from saw mill logs, which, being thoroughly water-soaked when sawed from the log, requires to be dried in order to fit it for use. The great difficulty experienced in this work with the kilns heretofore employed has been in getting rid of the moist air or vapors driven off from the mass of material. This condenses rapidly, and unless means are provided for keeping it in a heated and rarefied condition, it is a source of great trouble and annoyance. Mr. Allen has devised the means for obviating the difficulties named and for insuring the proper working of the drying apparatus at all seasons of the year.

A novel sewing machine motor has been patented by Mr. David L. Miller, of Madison, N. J. This motor is intended to be operated by the foot or by the act of rocking. A rocking platform is provided for the operator to rest his feet upon, while he sits in a chair the latter of which is attached to the platform, which platform is pivoted to an upright lever through which the power is transmitted. The act of leaning back and forward by the operator oscillates the chair, which transmits motion and power to the upright lever. The upper end of the vertical lever is provided with a double rack and pinion, which is driven by the power conveyed by the foot rest or by the rocking movement of the operator, as the case may be. This invention possesses much ingenuity, and is very simple and inexpensive to construct.

MISCELLANEOUS INVENTIONS.

A spoon holder for cooking vessels has been patented by Mr. John A. Hemsteger, of Piqua, O. The invention consists in combining with a sauce pan or other vessel used in cooking operations, a device for holding a spoon, the object being to save the trouble and annoyance caused by the spoon slipping into the vessel.

Mr. George A. Fitch, of Oakland, N. Y., has patented an improved speaking telephone. This invention relates to an improvement in receiving instruments for the electrical speaking telephone. The invention consists of an apparatus in which a strip of suitable material is connected to a diaphragm and passed between two rotating rollers, one of which rollers is supported in the armature of an electro-magnet. The armature is provided with an adjusting spring to prevent it from responding to induced or minor currents. When an electric current is passed through the rotating rollers and the strip, the friction between the said parts will be increased or diminished in proportion to the varying intensity of the current, and a corresponding vibration of the diaphragm will be produced.

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