

RECENTLY PATENTED INVENTIONS.

Engineering.

ROTARY ENGINE.—Charles H. and Alonzo Stone, Ringgold, Texas. This improvement comprises a cylinder with inlet and exhaust ports between which slides a gate, a piston traveling in the bore having an arm secured on the main driving shaft, while the gate is actuated by a cam mechanism. The steam chest has a piston valve to control the inlet port, the valve being actuated in one direction by the steam to open the port, while an eccentric cam on the main shaft moves the valve in an opposite direction to close the inlet port. The steam can be cut off at any point in the stroke of the piston, thus utilizing its expansion to the fullest extent.

WATER WHEEL.—Edward N. Andrews, New Britain, Conn. In this wheel, which is designed for use wherever a water or paddle wheel is employed, the paddles are pivoted at their centers, and thus are balanced and self-reversing, being so arranged that when in propelling position forward or backward compartments will be formed confining the water between the paddles and the body of the wheel, imparting a maximum pressure until the paddles are carried upward by the wheels, when the paddles reverse themselves and discharge the water.

MECHANICAL MOTOR.—John E. West, Centralia, Washington. A rope to which is attached a weight passes over a winch drum at the base and a loose pulley at the top of an upright frame, and the drum shaft is connected with a gearing, an escapement, and a crank, affording a simple, inexpensive, and reliable mechanism to utilize the force of gravity afforded by a falling weight, and convert rotary motion into a vertical reciprocal movement to actuate the plunger of a pump, or for other purposes.

HOT AIR FURNACE.—Christopher M. Bridges, Seattle, Washington. The exterior shell of this furnace is made in sections, fastened together in any suitable way, the combustion chamber within forming with the shell a hot air compartment. There is a hot air casing within the combustion chamber, and a dome with which the hot air casing communicates is provided with nozzles projecting into the outlet flues, cold air pipes admitting air to the hot air compartment and casing. The construction is simple and durable, and designed to quickly heat the incoming air and keep it pure.

Railway Appliances.

MEANS OF PREVENTING RAILWAY COLLISIONS.—Eduardo M. De Monte and Carl Jost, Bombay, India. According to this improvement the line is divided into a series of sections, each arranged to be automatically closed at the forward end by the train as it enters the section. An electro-mechanical controlling apparatus is automatically operated to thus prevent collisions, from negligence or otherwise, the arrangement being such that the mechanism of one apparatus is set in motion by an electric current from the batteries of the apparatus at the other end of the section, there being at the side of the rail at the end of each track section a transposing lever adapted to be actuated by the broadened flange of a locomotive or other wheel, means for connecting each lever with the corresponding apparatus, a switch mechanism for operating the switches, and means for connecting the switch mechanism with the corresponding apparatus.

TRAIN ANNUNCIATOR AND ALARM.—Alfred E. Watts, Duluth, Minn. A clock having a series of electrical contacts, an annunciator provided with an electric bell, and a rotating electric disk upon which are the names of stations and the hour of arrival and departure of a train, are so arranged that the annunciator will be operated by an electric circuit under the control of the clock. The improvement affords a simple and effective mechanism for indicating the departure or arrival of trains, for the convenience of passengers.

CARBURETOR.—Harry B. Cornish, Hampton, Iowa. This is a simple and inexpensive apparatus, especially applicable for use in lighting railway trains, carbureting air by forcing it through a body of hydrocarbon, that the vapor thus evolved may be burned as a gas. It is so constructed that the gasoline, naphtha, etc., used cannot possibly escape from its tank, even should the car tip over, automatic valves shutting off both the fluid and the air when the car is excessively tipped. The apparatus is also generally useful as an efficient and safe means of lighting.

Mechanical.

FLUE CUTTER.—Eber W. Pratt, Ipava, Ill. This device has a cylindrical body with an annular flange adapted to rest against the outer end of the tube, and a square central aperture in which is inserted a mandrel having a suitable handle. In the body are radial apertures in which move cutters adapted to be forced outward by the pressure upon their inner ends of the tapering inner end of the mandrel, as the latter and the body are turned by means of the handle. An enlargement or head upon the extreme end of the mandrel prevents its entire withdrawal from the body, and springs return the cutters to an inner position when the mandrel is withdrawn.

BEARING.—Olaus B. Jacobs, Fremont, Washington. In both sides of the hub of a pulley are cups holding balls, and the hanger has cup-shaped sides overlapping and inclosing the cup portions of the pulley hub, while cones are detachably secured to the inner surface of the cup-shaped sides of the hanger in position to engage and impinge upon the balls, thus forming a ball bearing of novel construction to minimize the friction.

SANDPAPER WHEEL.—Frederick H. Stubbe, New York City. According to this improvement the spindle provided with a working face of sandpaper has a diametrical slot leading to an interior recess, in which is a clamping bar adapted to clamp both ends of the paper, and draw it tightly to its elastic cushion upon the periphery of the spindle. The arrangement is such that the adjustment of the paper, and its removal when worn out, are effected with great facility.

NUT LOCK.—Theodore Martin, Wallaceburg, Canada. This improvement comprises a washer having a series of projections arranged in pairs about its edges, a locking key resting between the nut and the projections, and one of the projections holding the key against displacement, while the other is designed to be bent down upon the key to hold it against the nut. The device will lock a nut in a number of different positions, and either on the square or bias.

Agricultural.

HORSE HOE.—Crispus Cottis, Epping, Eng. In this implement the side bars are pivoted to be capable of adjustment laterally to suit the width of the rows between which the tines are to act. The implement is light and strong, may be readily expanded and contracted and compactly folded up, and the stocks of the tines are adjustable along the side bars and also about their own vertical axes, to keep the tines forwardly directed, whatever the degree of expansion of the frame. Special means are provided for securing the hoe point or share to the tine, and by the use of points or shares of various forms the machine is adapted for heavy or light work.

BROODER.—Ambrose B. Shaub, Beach City, O. The casing of this device has partitions forming several compartments, in the center one of which is a heating drum, with air-distributing pipes extended to heat the other compartments from above, while a water receptacle incloses the upper end of the heating drum. The young chickens can readily pass from one compartment to another, or into the yard, and the proper ventilation and heating of the several compartments is readily obtained.

The Household, etc.

LAMP.—Delmar D. Pinkham and Frank E. Lewis, Longview, Tex. These inventors have designed a simple and effective mechanism for creating an air blast for a chimneyless lamp. An air space surrounds the oil reservoir, and in the hollow standard below it is a small electric motor, the revolving armature of which operates a fan to cause an upward current of air. Removably secured in the lamp base is a dry battery, and a conveniently arranged switch in the connections enables the motor to be stopped and started, as desired, its operation affording an air blast designed to insure a clear, steady flame, without the aid of a chimney.

CANDELABRUM.—Charles S. Koehler, Brooklyn, N. Y. This is a sectional device, the parts of which may be quickly separated and put together, and the candle-carrying arms are adjustable from a common center horizontally or at any desired angle, two sets of such arms, at least, being located on a standard, each set independently adjustable. The candlesticks are preferably arranged equidistant along the arms, the inner ones being also equidistant from the fixed candlesticks upon the standard heads.

FRUIT HOLDER.—William Nicholson, Brooklyn, N. Y. This is a simple device with which to hold oranges and similar fruit, for more conveniently eating such articles without danger of soiling the fingers or hands. A small cup, of a size to receive half an orange, has a base, and hinged at the top edge of the cup is a ring provided with inwardly and downwardly projecting prongs adapted to engage the fruit and hold it in place, the prongs being engaged or disengaged by closing or opening the ring.

HEAT REGULATOR FOR OVENS.—Anton Bednarz, New Lisbon, Wis. This is a device to allow the hot air to escape when an oven is becoming too highly heated. A plate with a wire gauze-covered opening is arranged to establish communication between the interior of the oven and the external air, the plate having standards for supporting and guiding an expansion bar, and actuating levers, one of these levers carrying a cover for closing the opening. The expansion bar, as it is lengthened by excessive temperature, actuates the lever to uncover the opening.

PLANT PROTECTOR.—Joseph Garbesi, Moundsville, W. Va. A sheet of paper is folded to form a cone-shaped body, the contact parts united by waterproof cement, and the inner and outer faces of the body are coated with coal tar, an additional sand coating being applied on the outer face. This very simple and inexpensive protector is well adapted to set over plants to protect them from sudden changes of temperature, the coal tar covering causing the heat to be retained in the protector overnight, and the smaller sizes may be conveniently employed as transplanters, etc.

CLOTHES PIN.—Hattie Merrill, Westphalia, Kan. A single piece of wire is bent into W shape, with the two portions in the middle forming loops, and the outer and upper portions of the loops are bent outwardly to form spring coils, then extended continuously across the ends at right angles to prevent the rising of the clothes line. The device has an easy and full spring action, adapting it to pass over and securely hold heavy articles of clothing as well as light ones, without danger of tearing or injuring the clothes.

CLOCK-WINDING MECHANISM.—Martin Everhart, Austin, Tex. The periodical automatic winding of a clock by water power is effected by the mechanism designed by this inventor, which utilizes the power afforded by the gravity of water discharged at regular intervals from a tank in elevated position, where it may be kept supplied by the ordinary rainfall upon the roof. In the clock casing is a vertically reciprocating water receptacle, with gravity valve in its base, and a rotatable horizontal shaft on which are pulleys connected with the winding arbors of the clock, while a device for operating a valve at the lower end of the conductor pipe leading from the elevated tank is controlled by one of the connections between the winding arbors and the pulleys on the horizontal shaft.

FIRE KINDLER.—Perry S. Grindle, Brooklyn, Ala. A moulded cake, of proper dimensions for efficient and economical use as a fire kindler, has been designed by this inventor. Among its ingredients are sawdust, resin, and a combustible cement of coal tar, asphaltum, etc. When pressed into shape, the substance remains consolidated without becoming sticky, does not

disintegrate with age, and is sufficiently inflammable to readily ignite a mass of coal in a stove without the use of other kindling material.

Bicycles, Vehicles, etc.

BICYCLE.—William Y. Cocken, Tiffin, O. The vibratory strain and the shock incidental to the severe use of a safety bicycle are designed by this improvement to be greatly reduced and taken up, correspondingly increasing the comfort of the rider. The main frame has its seat bar or backbone connected at its front end to the steering head by a spring connection, its rear end being similarly connected with the rear wheel fork frame. These connections are so arranged that the weight of the rider will assist in carrying the wheels over an obstruction instead of retarding such movement, as is the case with rigid frames. The brake mechanism is operated through the steering head, and suitably arranged movable bearings receive the propelling axle.

BICYCLE GEAR.—Erick J. Swedlund, Atwater, Minn. This inventor has designed a strong and simply constructed gear, comprising a locking or clutch mechanism carried by the driven wheel and normally connecting it with the drive wheel, the arrangement being such that it may be readily thrown in and out of gear by the rider, to permit of traveling with less speed and increased power, as may be desired in going up hill or over rough roads, or vice versa. When the machine is thrown in gear at the time of going down a hill the operator can hold the pedals and axle at a standstill, resting his feet on the pedals.

FIFTH WHEEL.—Caleb R. Turner, Brooklyn, N. Y. This invention covers an improvement on a previously patented invention in which a series of revoluble bearing rollers is held between upper and lower plates, the lower plate being carried by the running gear, and the upper plate supporting the superstructure of the vehicle. The roller bearing consists of a single ring, having an exterior circular series of studs supported from the ring by one end, the studs carrying rollers, over which fits a circular channel iron, forming a support for a superstructure.

THILL COUPLING.—Nicholas I. Woolsey, Lawrence, N. Y. According to this improvement, the thill iron has a head with downwardly extending parallel jaws to receive the coupling bolt between them, the jaws being transversely bored and having at one end cam grooves, which are entered by end lugs of the pin, while an anti-rattling spring, abutting with its free end on the axle clip, is held on the back portion of the thill iron. The device is very simple and inexpensive, and with it the thills or a pole may be quickly attached to or removed from a vehicle, but only when the free ends of the thill or pole are down, and the tension is thus removed from the anti-rattling springs.

HEATING AND LIGHTING VEHICLES.—Napoleon B. Ross, Gilboa, O. In a casing supported in the bottom of the vehicle is held a lamp in such position that its light is thrown around the vehicle upon the road, while its heat passes through the casing to the interior of the vehicle. A special cover in the bottom of the vehicle excludes the heat when desired.

BRIDLE.—Harvey S. Hill, Ithaca, Mich. This bridle has cheek pieces with rein-receiving rings, in which a cord is fixedly held by its ends, a nose band being also fixed held to one of the rings and loosely passed through the other, its free end being adapted for connection with a rein, the arrangement being such that a pull on the cheek pieces exerts tension on the cord. The device is cheap and simple, and adapted to connect with and be operated by the ordinary driving reins for effectively subduing vicious horses.

Miscellaneous.

COAL-WEIGHING BASKET.—Thomas C. Du Pont, Central City, Ky. In weighing two grades of coal separately for settlement with the miner, and weighing them together in loading the car, a grade of mixed coal is sometimes not weighed, but estimated, which it is the design of this improvement to obviate. Combined with the inclined screen and coal-weighing basket, having a hinged section at its lower end, is a subjacent transfer chute attached to the bottom of the basket, with a screen arranged in line therewith, and a hinged section for holding or discharging the contents of the transfer chute, the invention also covering other novel features.

FREIGHT OR PARCEL CARRIER.—Henry C. Forney, Philadelphia, Pa. This carrier comprises a circular car with an annular rib, in which is a door, and side trunnions having clutch faces, to be used in connection with a track having an inclined section, upon which the car rolls, there being also a combined power and relay station with adjustable boxes constructed in sections and automatically operated and adapted to journal the car, in connection with a brake and power mechanism, the brake engaging the periphery of the car and the power mechanism engaging the axis of the car. This carrier is designed to transport mails, packages, merchandise, etc., traveling a long distance by gravitation, and traveling for a certain space on its own stored power.

ASPHALT PAVEMENT.—Charles H. Bull, New York City. The roadbed is preferably formed of broken stone, cemented together with hydraulic cement, to form a base for an asphalt sheeting composed of sand, asphalt, and heavy petroleum oil, there being stirred in during the process of admixture a proper proportion of fibrous or filamentary material, such as hair, metal strands, or vegetable fiber, to bind the composition throughout its mass, and also bond it to the concrete base by the downwardly projecting filaments.

ARTIFICIAL STONE.—Granville M. Breinig, New Milford, Conn. This is a composition consisting essentially of crushed quartz, ground calcined quartz, and a hydraulic cement, prepared and compounded in a special manner for different uses, and so as to produce an artificial stone of superior qualities and usefulness, extremely well adapted for floors, sidewalks, curbstones, drains, or similar purposes. It admits of a hard, fine surface finish, and possesses great durability and resistance to the action of the elements, dampness, etc. Any desired coloring matter may be added in the manufacture.

WINDOW PACKING AND ANTI-RATTLER.—Stephen R. Kirby, New York City. The sliding sashes, according to this improvement, have opposite meeting rails with longitudinal and opposite recesses, and a packing gasket is secured to the upper wall of the recess in one rail and a flexible metallic packing strip at one edge in the recess of the opposite rail. The improvement may be cheaply and easily applied to a new or old window, making an air-tight seal which will also hold the sashes so as to prevent rattling. The packing can be readily adjusted to suit windows varying in looseness.

OPENING OR CLOSING DOORS.—John H. Whitaker, Davenport, Iowa. This is a simple, inexpensive and easily operated mechanism by which the opening and closing of a door are accomplished by means of levers, which are made to open the door by the weight of the person about to pass through the door, the closing of the door being effected by a counterweight operating the levers for a reverse movement.

NEGATIVE AND SCREEN HOLDER.—James Scouler, San Francisco, Cal. This is a device for use in photo-engraving, to hold the negative and sensitive plate in proper relation to each other, thereby avoiding the necessity of adjusting the screen for each plate. It consists of a frame rabbeted on one side and provided with supports for holding a sensitive plate in the rabbeted side of the frame, spring buttons being pivoted on the opposite side of the frame for holding a screen in this side.

PERPETUAL CALENDAR.—Daniel A. Holtzman, Myerstown, Pa. This device is arranged in an upright cylinder mounted on a suitable base and turned by a handle at the top, the cylinder having slots lettered to represent the days of the week, and a drum within the cylinder having groups of dates representing the years of a century. The device may be readily adjusted to suit the different years, months and days, and by its means any particular day may be quickly and accurately ascertained.

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.

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