

RECENTLY PATENTED INVENTIONS.

Engineering.

BOILER FEEDER.—John E. Winder, Kansas City, Mo. This feeder is combined with a tank arranged above the water level of the boiler, a supply pipe entering and discharging into the tank while a nozzle within the tank opens into the supply pipe, a steam pipe connecting the nozzle with the steam compartment of the boiler. The device is designed to automatically keep the water in the boiler at a height previously determined upon, to heat the water before feeding, and to precipitate impurities before the water enters the boiler. In the feed pipe is arranged a column adapted to be filled with a suitable compound, fed gradually through a lazy cock to the tank to lubricate the several parts, and also cause the dissolution of scale or incrustation, and prevent its formation in the boiler. The device is entirely automatic in operation, and is simple and durable in construction.

AIR BRAKE VALVE.—Lewis S. Riggs, Selma, Ala. This is an automatic cut-in valve for use with compressed air pipes under cars for applying and releasing the brakes, and the invention covers a novel construction and arrangement of automatic valves in connection with the couplings and blind couplings, whereby all failures to open the air valves after the couplings are made are avoided. After the act of coupling the pipes is effected, the valves automatically open air communication through them, so that by no means can the pipes be left in an obstructed or inoperative condition.

Railway Appliances.

CAR COUPLING.—Thomas Dee, Concord, N. H. This coupling is made with two draw-bars provided with lateral hooks and pivoted to the car to swing outward or away from each other only, one of the bars being longer than the other and having an enlarged head, together with other novel features. The coupling is designed to be effected automatically, but also to uncouple automatically should the car be derailed, thus causing the air brakes to set themselves and stop the car, and also prevent the derailed car from dragging the remainder of the train with it.

Mechanical Appliances.

BENCH PLANE.—Saverio Tuoti, New York City. Combined with the plane stock and cutter is a longitudinal screw in the stock, a nut on the screw engaging the cutter for adjusting it endwise, while a transversely ranging screw with a nut engages the cutter for adjusting it laterally. The construction is such that the plane iron sets at quite a sharp angle with the working face of the plane, so that it will cut very easily, while the means for adjusting the plane iron endwise and laterally are simple and efficient, while a face section is adjustable to regulate the size of the shaving throat, insuring the true and smooth working of the plane on any quality or grade of hard or soft lumber.

BARK MILL.—Albert F. Jones, Salem, Mass. In this mill an annular base with a hub in the center is rigidly secured to the hopper, radial wings in oblique planes connecting the hub and base, a bearing sleeve in which is journaled a shaft being arranged in the hub, while a horizontal revolving knife-carrying disk is mounted on the lower end of the shaft and adapted to revolve beneath the oblique radial wings. The construction of the machine is such that its various parts can be readily adjusted, removed and replaced, while in operation it is designed to reduce the bark more rapidly and much finer than the machines now in use.

Agricultural.

HAY LOADER.—Adolph and Albert Lasack, Oxford Junction, Iowa. This invention covers an improvement on a machine formerly patented by Adolph Lasack, there being but one crank shaft provided for the improved implement, while the feed arms are made to practically correspond in shape to the shape of the bed over which they travel, thus increasing their working area, the arms being in spring-controlled sections, one of the sections of each arm serving as a rake head. The implement is so lightened and simplified by the improved construction that it may be readily worked by an inexperienced operator.

Miscellaneous.

SUSPENDERS.—Andrew J. Bobbs, Marion, Ind. A narrow back piece is, according to this invention, adapted to be worn between the shoulders and along the spine, the back piece being stiffened by a stay of steel or whalebone, while supporting and bracing straps connected with the back piece cross each other diagonally thereon, and a cross strap is arranged at right angles to the back piece, the fastening and supporting devices being secured to the ends of the cross and supporting straps.

ADDING MACHINE.—James Richardson, North Tarrytown, N. Y., and Frank E. Heath, New York City. Combined with keys representing the figures from 0 to 9 are registering and verifying wheels, with a mechanism for imparting motion to them according to the number carried by each key lever, with a novel positive carrying mechanism for causing any wheel of the series to carry one to the next wheel in order. There are also positive stops for preventing the wheels from passing beyond the prescribed limit, and a let-off device for releasing the feeding ratchets, with a spring for returning the summation wheel turning mechanism to the starting point.

VOTING BOOTH.—Peter Zuckriegel, Tell City, Ind. This is a knockdown booth, adapted to form one of a series of booths or to be used singly, and is especially designed to facilitate voting under what is known as the "Australian system," affording secrecy for the voter, while the whole construction may be knocked down and folded up in small compass for transportation or storage. It is made with a backboard

to which is hinged a series of partition boards capable of folding on each other and on the backboard, a clamping rod supporting curtains and connecting and binding the partitions. A triple booth of this kind, with half partitions or panels between each compartment, weighs only 106 pounds, affords complete privacy for the voter, and may be set up and adjusted by the most inexperienced.

TYPEWRITING MACHINE.—Michael Hearn, Hampstead, England. Combined with a carriage having a rack and a pivoted and spring-pressed lever with a pawl engaging the rack, are pivoted and counter-balanced type levers arranged in a circle, with operating key levers pivoted in the rear of the type lever, with semicircular levers pivoted near their ends and adapted to be engaged by the key levers when they are depressed, there being connections between the semicircular levers and the pawl-carrying lever. The machine is designed to be very simple and effective. A further patent has also been granted the same inventor for an improvement in typewriting machines in which weighted or balanced type levers are operated by finger keys, the type levers having a counterpoise at one end and a bevel-headed screw fitted to them.

OIL WELL BAILER VALVE.—Andrew W. Knittel, Evans City, Pa. Combined with an outer tube provided with a valve supported by a forked shank secured to the inner wall of the tube and projecting below it, is a sliding sleeve fitted to the tube and having a valve seat furnished with a forked barbed rod or spear, to limit the movement of the sleeve and loosen the sand in the tube. The bailers are used for the removal of salt water and oil, and the valve is designed to be unaffected by the presence of sand.

MAST HOOP.—Charles S. Mott, Pat- chogue, N. Y. This hoop is made with two abutting ends, one having a dovetail tongue and the other a dovetail recess to receive the tongue, a sliding sleeve being adapted to cover the connected ends of the hoop, with means for locking the sleeve over the joint, the device thus forming a sectional hoop capable of being readily sprung around a mast and conveniently disengaged therefrom.

BUCKLE.—Charles G. Blue, Pleasant Hill, Mo. This is a buckle for harness and other straps which have a sliding tongue, the buckle being so made that the tongue can be easily introduced within the frame and have a free movement thereon, while the strap end can be readily introduced and will be securely held in the buckle. There is no permanent attachment between the tongue and frame in this buckle, and owing to the open connection of the parts there is but little chance for fouling by dirt or other foreign matter.

SHOE FOR DEFORMED FEET.—Legrand D. Harding, Colfax, Washington. This shoe has the usual outer and insoles, and a strengthening plate is held to the soles and hinged near the ball, in connection with straps and supports secured to the sole and adapted to fasten over the foot, a support being secured to the strengthening plate on one side of the shoe and shaped to stand off from the foot. The shoe is designed to adapt itself to the movements of the foot, while maintaining pressure as required on special portions.

SPRING HINGE.—Herman A. J. Rieckert, New York City. This is an improvement on a former patented invention of the same inventor, by which the hinge is made more simple and durable in construction, being provided with a tube or casing fitted into a suitable recess in the door, and held in place by side and bottom plates screwed or otherwise fastened to the door. A spring held in the tube presses on a double-faced cam, having lugs fitting in suitable guideways, so that the door can swing in either direction, and friction is reduced to a minimum.

KNOCKDOWN FURNITURE.—Herman A. J. Rieckert, New York City. Combined with a frame provided with posts, each made in two parts, and hinges connecting the two parts of each post together lengthwise, are horizontal bars connecting the adjacent parts of two opposite posts with each other, shelves fitted between the posts and resting on the bars, and a top cover or shelf fitted on dowels of the posts. The construction is especially designed to facilitate the forming of show cases, wardrobes, tables, counters, etc., which may be quickly knocked down and folded for storage or transportation, and easily set up.

FOLDING BOX.—John Howenstine, Fort Wayne, Ind. This box is preferably made of thin wooden sheets, double pieces with their grain crossed being used for the sides, lid and bottom, the material being reinforced by wire rods and staples, the end walls being secured to the sides and bottom by end battens, while turn-buckle latches are located on depending battens of the lid and adapted to interlock with cross pins in the end walls. The box is designed to be a strong, light, and cheap receptacle, adapted to serve for egg cases, fruit crates, etc., and to be readily set up and knocked down.

SUBSOIL PIPE.—Martin Rehm, Long Island City, N. Y. This invention provides means whereby the spigot end of a pipe section may be positively and securely locked when inserted in the hub of an opposed pipe section, by turning one section a slight distance either to the right or the left. The sections are also so made that when coupled a packing will not be needed at the joints, and their inner cylindrical faces are flush at the abutting surfaces when the sections are locked together.

LINING FOR BUTTER TUBS.—Joseph Mersman, Ottawa, Ohio. This is a lining of paper or other thin flexible material, folded outwardly over the top edge of the tub and inwardly at its lower end, where it is folded to form a flange, over which a circular false bottom of paper is placed, making a thin non-odoriferous removable lining, which is inexpensive and adapted to remain in upright position in the tub.

VEHICLE RUNNING GEAR.—George L. Banks, Fredonia, Kansas. This invention provides a mechanism between the body and springs, designed to prevent the latter from receiving a sudden strain, thereby adding to their durability. The improved running gear is especially adapted for use with buggies,

the construction being such that the springs need not be attached to the body, the spring having an independent end movement and at the same time keeping the body level sidewise.

CARRIAGE TOP ADJUSTER.—William W. Swan, Andover, South Dakota. Two arms are each rigidly, adjustably, and detachably secured to a lower brace section, and project forwardly beyond the bows, to form a simple, inexpensive, and convenient device for the manipulation of the jointed frame supports of the vehicle cover, whereby the frame may be easily raised or lowered by one seated in the vehicle, these arms also preventing the flapping of the curtains when the top is lowered.

GATE.—Hiram Barker, St. Joseph, Mo. This invention relates to an improvement in lifting farm gates, providing a short, durable and light gate, in lifting or opening which the pivoted end is made to counterbalance and at one point overbalance the free end, thus rendering the operation of opening the gate very convenient and expeditious.

WIRE FENCE.—John W. Buchanan, Smithville, Ohio. This is a fence in which the wires are secured at one end to a post, chains being attached to the other ends of the wires, and the chains passed through holes in another post at any required distance off, whereby the wires composing the different panels of the fence may be tightened separately, by inserting keys through the links of the chains on the outer side of the distant post.

SPRINKLING CAN.—Alexander P. and Francis M. Baker, Empire, Wis. This is a specially devised can for spraying poisoned solutions on plants and bushes, and is constructed with a readily operated valve by means of which the flow of liquid can be economically controlled, to be applied only where it is needed. The device can also be readily changed to an ordinary water sprinkler.

COFFIN HANDLE.—Lyman E. Woodward, Owosso, Mich. This handle is preferably made of wood, strong and light, and adapted to be conveniently covered by fabric of the same kind as that used to face the exterior of the casket, and with the handle are furnished hinge joints adapted for adjustment to suit different diameters of handle bars, and connect them strongly to the side of the coffin.

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SCIENTIFIC AMERICAN
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1. Plate in colors of a handsome residence on Riverside Park, New York City. Floor plans and elevations. Architect Mr. Frank Freeman.
2. Colored plate illustrating a row of brick dwellings at Newark, N. J., costing about \$3,000 each. Perspective elevation, floor plans, etc. E. S. Amerman, Newark, N. J., architect.
3. Engravings and floor plans of a double residence on Washington Heights, New York City. Cost \$20,000 each. A very picturesque design.
4. A dwelling at New Haven, Conn. Cost \$8,000 complete. Perspective view, floor plans, etc.
5. A colonial cottage erected for Mr. C. W. Macfarlane at Elm Station, Pa. Cost \$5,300 complete. Floor plans and perspective view.
6. Design of a modern interior. A comfortable hall and staircase.
7. A picturesque cottage erected for George W. Childs, Esq., in his Villa Park at Wayne, Pa. Cost \$7,200 complete. F. H. & W. L. Price, Philadelphia, architects. Plans and perspective.
8. A tower house recently erected at Elm Station, Pa. Cost \$4,600 complete. Floor plans, perspective elevation, etc.
9. A row of low cost colonial houses erected at Roseville, N. J. Cost complete \$2,000 a house. Plans and perspective view.
10. An English cottage erected at Elm Station, Pa. Cost about \$4,000. Perspective and floor plans.
11. Sketch of a farm house recently built in Steuben County, New York, at a cost of \$695.
12. Miscellaneous contents: Simplicity in furnishing and decoration.—Weight as a test of strength in timber.—Architect of the Woman's Building of the Columbian Exposition, Chicago.—Redwood for interiors.—The Richmond heater, illustrated.—Some new designs in radiators, illustrated.—Improved plumbing appliances, illustrated.—Bent glass.—Improved woodworking machinery, illustrated.—A strong and light lawn fence, illustrated.—The "Heatcook" range, illustrated.—The H. W. Johns liquid pairs.—A new roofing metal, illustrated.

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Notes & Queries

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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.

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(3078) S. J. B. asks for a good patent leather polish for shoes. A. A waterproof blacking which will give a fine polish without rubbing, and will not injure the leather: 18 parts beeswax, 6 parts spermaceti, 66 parts oil of turpentine, 5 parts asphalt varnish, 1 part powdered borax, 5 parts Frankfort black, 2 parts Prussian blue, 1 part nitro-benzol. Melt the wax, add the powdered borax, and stir until a kind of jelly has been formed. In another pan melt the spermaceti, add the asphalt varnish, previously mixed with the oil of turpentine, stir well, and add to the wax. Lastly add the color, previously rubbed smooth with a little of the mass. The nitro-benzol gives fragrance.

(3079) J. P. T.—The ruby jewels can be ground out larger with a hard copper taper wire twirled by the fingers or in a lathe, using diamond dust and oil. The diamond jewels require a steel taper wire with diamond dust and oil.

(3080) G. G. asks (1) if in liquid measure c. c. is an abbreviation for cubic centimeter? A. Yes. 2. How many c. c.'s in one fluid ounce? A. 29.5720. 3. And how many ounces in one liter? A. 33.8160.

(3081) L. S. A. asks: 1. What will clean or polish a marble slab of a soda water fountain which has become rough and dirty by the action of the soda water? A. Use ground pumice stone and water, followed by whiting or putty powder, both applied with a wet woolen cloth, or try following: Mix ¼ pound soft soap with same of whiting in powder, 1 ounce washing soda