

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Daniel Kint, Alpena, South Dakota. Two operating levers are pivotally connected together at their inner ends, and there is connection between the levers and the coupling pin, to raise and lower it, in connection with a latch and hand levers connected with the latch, there being a keeper on the end of the car adapted to engage the latch. The device may be conveniently coupled with the ordinary link coupler, and opposing cars may be uncoupled without the trainmen passing between them, while the coupling pin may be locked in elevated position if desired.

RAIL JOINT.—John N. Lewis, Coulee City, Washington. The chain is, by this invention, formed with a base plate, a side plate, and a transverse portion within the hollow formed by the juncture of the plates, and provided with a seat for the fish plate and locking plates. The transverse portion and the fish plate sections serve to hold the lock plates in position, and the lock plates operate to prevent the nuts from jarring loose, the whole forming a strong, secure rail joint.

RAILROAD GATE.—David M. Dewitt, Bee Branch, Ark. This is an automatically working device, the gate being designed to be opened and closed by an approaching and departing train or wagon. The construction is such that an approaching train passes from the fixed rails to rails on a hinged platform, the depression of the latter operating through shafts and links to open the gate, which is afterward closed by connected weights and levers. The device is also applicable, with some modifications, to a wagon road, the gate being then opened by the weight of the wagon and afterward similarly closed.

ELEVATED RAILROAD.—Eliphalet L. Arnold, Georgetown, Texas. This invention provides a construction designed to be comparatively cheap and absolutely safe, with which the cars will ride easily, and which can be readily adapted for both passenger and freight traffic. The railway is supported upon sectional hollow posts, from whose upper ends extend lateral arms, which pivotally uphold a continuous steel truss, the base plate of which forms a support for the track rails, the cars being suspended from the tracks through yokes. If desired, the cars may be brought near enough from the ground to be entered therefrom, or the entire mechanism may be light enough for the cars to be operated by horse power.

Electrical.

ARC LAMP.—Robert H. Thurston, Ithaca, N. Y. This invention provides a lamp having broad, flat carbons moving in the same vertical line or in approximately parallel lines, with the carbons arranged in planes intersecting at a small angle to prevent their slipping by each other, or jamming and welding together, thus extinguishing the lamps when shaken by the wind or other force. The angle in practice is not so large as to make any material difference in the length of the arc formed between the center and the ends of the carbons.

Mechanical.

WOOD TURNING MACHINE.—Abraham Stoner, Stony Point, La., and Francis M. Pennebaker, Pleasant Hill, Ky. This is a machine for turning solid stainless hulls or bodies of tubs, buckets, or similar wooden ware from a solid block, the invention being an improvement on a former patented invention of one of the inventors. By the improvement increased simplicity and strength of parts is secured, greater accuracy of adjustment and reliability of operation, with more compactness and better adaptation for convenient manipulation and control of the machine by the operator, doing better work more quickly and economically.

CARPENTER'S SQUARE.—Mark P. Paterson, New Rochelle, N. Y. This square is so constructed that one arm may be manipulated to strike a right angle or an angle more or less obtuse, as may be desired, several slides containing scales being located, if wished, in an arm of the square for use as needed. One of the slides may be removed from the arm and used in conjunction with an adjustable upon both arms to form triangles as required, and the square has scales for facilitating the calculation of the length, pitch, or angle of rafters, and for various other work useful to carpenters in house building.

WIND MOTOR.—Hagbarth Winge, Miles City, Montana. This motor has a frame with a central post carrying a pivot, on which turns a wheel having masts on its rim carrying sails, a gear wheel on the hub of the wheel meshing with a series of gears on a shaft connected with the machinery to be driven. The motor is simple and durable in construction, and is designed to actuate pumps and other machinery.

MOULD FOR ELECTROTYPE SHELLS, etc.—Jacob C. Wolfe, New York City. This is a mould capable of being quickly and conveniently knocked down or separated in sections, and disconnected from the block when cast, while its construction is such that it may be utilized for casting large or small backings or blocks, as desired. The flask has a shoulder around its interior and within is a series of core blocks of less height, each block having an external shoulder and having their lower adjacent faces inclined, core plates resting against the faces of each block and against the inner walls of the flask, and there being wedge-shaped spacing blocks or keys between the lower inclined faces of the blocks. This backing is very light and durable, being braced in every direction, and the blocks are quickly, accurately, and economically made.

FUR SEWING MACHINE DEVICE.—Catharina Booss, New York City. This is an improved guide attachment, for use in sewing fur, leather, and other goods, to bring the parts into the exact proper position, and provide means for brushing the fur away from the seam, exposing the skin to the action of the needle and keeping the fur away from it. The device consists of an open-ended hood having a central parti-

tion extending through it with brushes on its sides and with a revoluble brush turning at one end.

LUBRICATOR GLAND.—Fortunatus G. Kellogg, Brainerd, Minn. This is a device designed to be conveniently applied to reciprocating shafts, such as piston rods, valve stems, etc., to be readily held on the shafts and keep them well lubricated. It consists of a box composed of two sections hinged together and having opposite their place of hinging a staple and hasp, while there is a peripheral funnel on each section, and the adjacent or meeting sides of the sections have registering semicircular openings forming the shaft passage.

Agricultural.

POTATO DIGGER.—William H. Van Voorhis, Spearville, Kansas. This is a machine of simple and durable construction for digging potatoes, peanuts, etc., separating them from the dirt and weeds, and also separating the small and large sizes and passing the latter into a bag. A plow on the front end of the digger plows up the potatoes so that they pass rearwardly to an elevator, the weeds being cut off by cutters or shears, and the potatoes being turned over and screened on the elevator slats until they are finally passed on to a separating plate and thence to a hopper, from which they are removed to a bag.

TETHER.—William E. Bradley, Roscoe, N. Y. This is a tether in which the rope is paid out when pulled upon by the animal, and the slack is automatically taken up and wound in by suitable winding devices, the tether being cheap, durable, and compact, easily portable, and suitable for stalls as well as outdoor use. The body or frame of the device has a vertical rack, and a gravity winding wheel for the tether rope, there being friction disks on the axle of the gravity wheel, and pins on the hub of the wheel engaging the rack. Means are provided for securing the tether to a stall, or to a post, tree, or fence. [Address Tether Mfg. Co. 325 North st. North Middletown, N. Y.]

COTTON CLEANER AND CONDENSER.—William B. Wherry and William F. Smith, Overton, Texas. This is a cheap and simple machine for use in connection with a cotton gin, for rapidly separating the dirt from the cotton and condensing the latter to be easily handled and baled. The case or frame has an inlet at one end and an outlet at the other, between which an endless screen belt is held to move, a sand box being within the belt, and air pipes opening from the sides of the sand box to convey the dust and dirt away. The drums for the carrying belt are arranged beneath the inlet and above the outlet, and a spring-pressed corrugated hood is hinged to the case and extends above the upper drum.

SCRAPER.—Benjamin F. Shuart, Billings, Montana. This is a device which may be quickly adjusted to scoop or scrape up any desired amount of earth, delivering it where wanted, or strewing it evenly over the adjacent land, being especially adapted for use in grading land preparatory to irrigation. The frame of the machine consists of two parallel runners, between which a scraper with beveled edge is held to move vertically, a pivoted lever affording means for raising and lowering the scraper. By manipulating the lever the dirt may be gradually allowed to escape and be spread evenly on the ground.

Miscellaneous.

TYPEWRITING MACHINE.—Allard E. Benedict, Cairo, Neb. This is a machine designed to be easily manipulated, and arranged to print directly without the use of a ribbon single characters, such as letters of the alphabet, numerals, etc., and also words of two, three, four, or more letters each. Inking rollers are provided to ink the type, and the type holder contains 120 different types, the type holder being mounted to travel longitudinally on the carriage. The arrangement is such that no separate key or lever need be pressed to make space between two succeeding words.

TYPEWRITER REGISTER.—Harry I. Cromer, Rapid City, South Dakota. This is a simple device, adapted for attachment to any form of typewriter, and, by the movement of the keys and space bars, will accurately count and register the number of words printed by the machine. A recessed sliding bar to operate the register is arranged adjacent to the space bar, a spring on the sliding bar having a lug to enter the recess and a lug on the space bar contacting with a lug on the spring, while a stud on the sliding bar and a block on the spring are arranged in the path of the type rod and space rod lugs.

JEWELER'S FORCEPS.—David Mendelson, Eureka, Utah Territory. An article, or several articles, may be held at any desired angle by the use of these forceps, which are especially adapted for holding or clamping articles to be soldered, the device being also suitable for use in other lines of manufacture. In a supporting post, slotted at its upper end, is mounted to swing a bolt, to which arms are adjustably secured at their inner ends, being gradually curved upon themselves at their outer extremities, tweezers provided with eyebolts being adapted to slide from the arms around upon their curved extremities. The articles to be operated upon are clamped in the tweezers, when the latter are brought into the desired position and held there by various thumb nuts.

WATCH CASE SPRING.—John E. Ketchum and Thomas C. Nixon, Morrilton, Ark. The spring, according to this invention, is provided with a stiffly turning rivet or screw, having its head provided with a nick or other means for turning it, and having on each of its opposite sides a projecting lip, whose outer portion is sharpened to a knife edge, to bury into the metal of the bezel and hold the spring in place with a positive and firm connection.

BELLOWS.—John G. Gareis, Brooklyn, N. Y. This invention relates to rectangular bellows, such as used in accordions, photographic cameras, etc., providing therefor a simple and durable construction, with which the bellows will be perfectly air and light tight. The bellows are provided with corner strips, each formed of a single piece of material and containing a series of rounded-off corners arranged alongside

of one another, and adapted to be fastened by their legs to the folds of the sides and ends of the bellows.

CHANGE RECEIVER AND TRANSFER.—Weet R. Uchtmann, New York City. This is a device to be applied to a counter or similar support to receive change, and it is adapted to be readily manipulated to transfer the change from the receiving section to the hand of the person for whom it is intended. The arrangement is such that when a person receiving the change places his hand and presses upon a hinged section of a table, palm upward, a change-receiving receptacle is tilted so that the change will slide into the hand.

ROLL PAPER HOLDER AND CUTTER.—Edwin E. Sentman, Philadelphia, Pa. The construction of this device is such that the knife, by means of which the paper is to be severed into lengths, will follow the roll downward as the latter decreases in diameter, and the knife will, through the medium of a roller interposed between it and the roll of paper, exert constant tension upon the paper. The construction is very simple and inexpensive, and the frame of the device, with the knife and roll, may be carried upward and held in an elevated position to admit of insertion into the frame of a roll of paper.

COOKING UTENSIL.—Augusta R. Isaacs, New York City. This is a vessel to be inserted in a pot of water, where its contents may be steamed or boiled without escaping therefrom, the contents being then removed to a platter in bulk without injury. It consists of a perforated body, preferably made of sheet metal, with an open top and bottom, an opening in one side near the bottom and brackets on the inside below the opening, on which slides a perforated plate.

Note.—In the description of Mr. C. N. Wall's feeding attachment for paper folders for use in newspaper offices, the following typographical error occurred: The notice states that the feeder will place the papers in position to be folded with the aid of any gripping mechanism or any hand-operated machinery. It should read: without the aid of any gripping mechanism or any hand-operated machinery.

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JUNE NUMBER.—(No. 80.)

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1. Handsome plate in colors of a residence recently erected at Plainfield, N. J. Perspective views, floor plans, etc. Oscar S. Teale, architect. Cost about \$12,000. An excellent design.
2. Plate in colors of a cottage erected at Bensonhurst, Long Island, N. Y. Perspective elevations and floor plans. Cost \$3,450 complete. P. F. Higgs, architect, New York.
3. Engravings and floor plans of the Crescent Block of six houses erected on Golden Hill, at Bridgeport, Conn. An excellent design. Total cost of six houses \$55,000 complete. Messrs. Lougstaff & Hurd, architects, Bridgeport, Conn.
4. A handsome residence at Babylon, Long Island, N. Y., recently erected for F. H. Kalbfleisch, Esq. Cost \$17,500 complete. Two perspective views and floor plans. H. J. Hardenberg, New York, architect.
5. A school house at Upper Montclair, N. J. Perspective view and ground plans. Cost \$12,200 complete, including heating and ventilating apparatus. Geo. W. Da Cunha, architect, New York.
6. Perspective views of several very attractive dwellings located near New York.
7. A suburban residence of attractive design erected at Lower, N. Y. Cost \$2,800 complete. Floor plans and perspective view.
8. The St. James' Episcopal Church at Upper Montclair, N. J. A picturesque design. Cost \$8,000 complete. Messrs. Lamb & Rich, architects, New York. Perspective view and ground plan.
9. A residence at Ludlow, N. Y. Perspective and floor plans. Cost \$8,500 complete.
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11. Proposed railway tower for the Columbian Exposition at Chicago.
12. Sketch of the new City Hall, Philadelphia. — A magnificent structure.
13. Miscellaneous contents: Cork pavement. — Best treatment of hardwood floors. — The twin staircase, illustrated. — The electric stair climber, illustrated. — The sick room temperature. — Stair builder's goods, illustrated. — Ornamental hardwood floors. — Large winding partition doors. — The "Alberene" laundry tub. — House heating and ventilation. — Nolan's hot water and steam heater, illustrated. — The crushing resistance of bricks. — An excellent motor, illustrated. — A successful hot water heater, illustrated. — The lacquer tree. — A self-retaining dumb water, illustrated. — Architectural wood turning, 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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(4418) G. S. J. says: I would like to ask a question (to be answered in Notes and Queries) on which there seems to be a great difference of opinion among engineers.

On a plain horizontal tubular boiler, what stage of water is most economical (as regards labor and fuel) just as low as safety will permit, or as high as is possible without drawing water through the engine?

A. The safest and best practice is to carry the water 4 inches over the tubes in boilers of 3 feet diameter, 6 inches over in boilers 4 feet diameter, and 8 inches in boilers 5 feet in diameter, when the rear end of such boilers are set from one to two inches lower than the front or gauge end. This gives the largest safe water surface for the liberation of steam and lessens foaming.

High water makes wet steam, and is no safeguard to a boiler that is properly cared for. Wet steam is wasteful of fuel. Uniform feed and a uniform gauge measure as above indicated gives the best results.

(4419) C. E. B. says: In your reply to W. H. P., query No. 4360, date of May 21, you say: The water power of an artesian flowing well may be obtained by measuring the quantity of water delivered at the highest available point in cubic feet per minute, etc. This is true in theory. I would like to hear your opinion as to where the most power is exhibited in the following actual tests of a 7 inch well.

Pressure when closed 130 pounds, gives 2 inch stream 80 pounds, 2 1/2 inch stream 72 pounds, 3 inch stream 63 pounds, 4 inch stream 58 pounds. Is the power in proportion to the product of the quantity multiplied by the pressure? The 7 inch well referred to is in Woonsocket, Sanborn County, South Dakota. It is driving a 3 foot Pelton wheel which is running a 150 barrel flour mill, owned by Northy & Duncan. I think they are using less than an inch nozzle and have plenty of power. I finished the well in November, 1891. The tests were made through short pieces of standard pipe from 6 to 18 inches in length. The depth is 775 feet. This is a fair example of the way the pressure decreases as more