

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

TRAIN STOPPING DEVICE.—John B. Gross, Hoboken, N. J. A moving train is, by means of this device, designed to be stopped automatically when moving into proximity of an open switch, draw or other point of danger, the steam being shut off and the air brakes applied to bring the train to a standstill. The mechanism comprises principally a valve connected with the train pipe for applying the brakes and means for supporting the valve directly from the axle of the locomotive or tender, in connection with a valve-operating lever adapted to be actuated by a track mechanism. The same inventor has obtained a further patent on a train stopping device, relating principally to the track mechanism necessary in the operation of the foregoing improvement. The invention consists essentially of a signal arm, which swings over the roadbed, and is journaled in a bracket erected on the ties, there being also supported on the bracket a mechanism connected with the shaft of the arm and with the switch or draw.

CAR JOURNAL LUBRICATOR.—Sampson Walker, Winnipeg, Canada. A hanger suspended from the box has a horizontal member extending beneath the journal, on which turns and slides a loose roller pressing against the lower face of the journal. The roller has on its face a layer of cotton wicking and turns in oil, with which the lower portion of the box is filled. The construction is such that the device cannot be accidentally displaced, while it can be quickly and accurately adjusted to apply the oil evenly to the journal and does not require any kind of packing.

Electrical.

ELECTRIC SWITCH.—Joseph H. McEvoy, Waterbury, Conn. This invention provides a peculiar construction and arrangement of rotary contacts with positive actuating mechanism and an escapement or intermittent stop mechanism for conveniently and quickly turning on or cutting off any number of electric lamps, motors, heating apparatus, telephone or telegraph instruments, etc. It is also adapted to the use of cutting off all circuits leading into a building in case of fire and can be connected through electro-magnets which operate the shifting lever by wires running to thermostats at different points, so as to be automatically operated in case of fire or a great rise in temperature.

SUPPLY SYSTEM FOR ELECTRIC RAILWAYS.—Wilton F. Jenkins, Richmond, Va. The main feed wire, insulated throughout its main portion, is firmly secured alongside the outer side of the rail by a special form of clamp, and at intervals of six or eight feet is a bare, looped portion, adapted for engagement by the brush or contact piece upon the car, a removable cap fitting on the extremity of the contact portion to receive the frictional wear of the brush. The latter is formed to extend between two of the feed wire contacts, so as to be always in touch with one of them, a wire leading from the brush to the motor on the car.

GAS ENGINE ELECTRIC IGNITER.—Frank E. Tremper, New York City. Permanently separated rigid electrodes are, according to this invention, insulated in the cylinder, the electrodes being formed with sharp-edged heads at their inner ends inside the cylinder, while a flexible sparking strip is held insulated on the reciprocating piston and adapted to make contact with the heads of the electrodes. The device is designed to ignite the charge in the cylinder always at the proper time, a premature explosion or failure of ignition being positively prevented, while at the same time the construction is simple and durable.

Mining, Etc.

ORE SEPARATOR.—Charles F. Willsie, Ogden, Utah Territory. A blast fan is connected with one end of a casing, at one end of which is a hopper, and a series of connected pans containing quicksilver is arranged on the bottom of the casing, agitating wheels being mounted to revolve in the pans, above which is a series of hinged gates. The improvement is more especially designed for dry placer mining, to conveniently and quickly separate the precious metals from the sand without the use of water. Electricity is applied to the plates and pans to electrically charge and give life to the quicksilver and keep it from flouing, and lamp heat applied under the pans, or other means, to facilitate the separating of the precious metal from the sand.

Mechanical.

TOOL FASTENING.—Robert Douglas, Fall River, Mass. This invention provides means of securing files and other tools to wooden handles. The tapering shank of the tool carries on its end a hard metal collar, and the shank, with its collar, is adapted to be driven into a previously made recess in the handle, the collar fitting very snugly at the inner portion of the recess, and the outer end of the recess being engaged by a portion of the tapering shank, whereby the tool is firmly held in place and prevented from turning.

WEAVING ELASTIC FABRICS.—Samuel Brown, Easthampton, Mass. This invention provides a method of weaving an elastic fabric, on one face of which is a frill woven integral with the body. The warp for the body is formed in two sections, arranged one alongside the other, and the warp for the frill is similarly arranged, there being two distinct sets of harness for the main fabric and two sets for the frill or ornamental part. Only a single shuttle is employed in weaving the entire fabric, the shuttle passing alternately over corresponding sections and under the other sections, so as to carry the weft thread alternately over and under alternating sections of the warps for both the body and the frill.

PICKER PROTECTOR.—John Johnson, Chester, Pa. This is a simple and durable device adapted to properly protect the picker against breaking, and designed more particularly for use on picker staffs formerly patented by the same inventor. Connected with the picker stick of a loom is a spring device adapted to

counteract the movement of the stick in one direction and return it, the device being formed of two portions and a stop, whereby one portion of the spring is relieved of further strain before the end of the movement of the picker stick, and the remaining portion is subjected to a suddenly increasing tension to check the movement of the picker stick and prevent breakage of the picker.

BELTING.—Karl Kuchler, Aussig, Austria-Hungary. This is a woven belting formed of wire and fibrous material interwoven to present the wire to one face and the fibrous material to the other face of the belt, the fibrous material being carried over to form the selvage of the belt, and a protective border being secured to the outer face of the edges. This belting is designed to be very inexpensive, pliable, with the minimum of "stretch," and the quality of "hugging the pulley."

SAW TEMPLET.—Benjamin F. Spooner, Orange, Texas. To afford improved facilities for examining and marking saws, to correct faults in the saw blade by means of the usual hammering process, is the object of this invention, which provides a stock or holder in which is adjustably held a flexible band, with means for adjusting to the desired curve.

MACHINE FOR FORMING SPIRAL WIRE SPRINGS.—William B. Jackson, Portland, Oregon. This invention relates to springs used for making bed mattresses, upholstery and other purposes. To illustrate and explain the various details and combinations of parts embraced in the improvement has required a patent which has seven sheets of drawings and twelve printed pages of specifications and claims. The machine is arranged to automatically coil the wire into a double spiral and to fasten the ends of the wire upon the end coils.

Agricultural.

POTATO DIGGER.—Hamilton Pray, Clove, N. Y. Attached to the rear of a plow of any approved construction is one or more chain drags, some of the links carrying prongs arranged in a novel manner, constituting an operating agitator or whirl as the chain is drawn along. The whirl also has the tendency to throw the potatoes farther out to the sides of the furrow, keeping them on the surface of the ground and preventing their being covered up by the loose rolling earth.

LAND PULVERIZER.—Benjamin S. Sexson, Cincinnati, Ind. The main frame of this machine, with its drive wheels and axle, supports and operates a vertically swinging frame carrying rotary cutters or pulverizers adapted to be held at any necessary height and to turn easily through and pulverize the soil. Several of the pulverizers are provided to adapt the machine to different varieties of soil and to obviate replowing on any soil which has been once plowed, and the construction of the pulverizers is such that they may be cheaply made and easily repaired.

CONVEYER BELT FOR HARVESTERS.—Delos W. Storms, Western, Neb. This belt has diagonally located slats of greater thickness at their grain ends than at any other point of their length, the slats being constructed of a leather body and having a capping or covering of sheet metal. The construction is designed to obviate any falling out of the grain and insure its delivery to the elevator or the various packers of the binder straight, or in such manner as to insure its proper binding.

Miscellaneous.

SAFE.—Frank Crawford, North Urbana, N. Y. The door of this safe is made so that alarm will be sounded in case it is attempted to drill into it, or so that a cartridge may be exploded to kill or seriously injure the one operating the drill. Means are also provided whereby, when the safe door is locked, a cartridge will be automatically presented to a hammer, the cartridge being removed out of the path of the hammer when the door is opened in a proper manner. The alarm mechanism is so inclosed within the door as not to be visible.

PACKAGE ENVELOPE.—Martin Hess, New York City. This is an envelope to be attached to packages and to contain a bill or messages to go with the package. It has scallop-like projections along its margin to receive a cementing compound, so that it may be readily applied to a package, and a line of perforations, to permit the ready removal of the envelope, which remains sealed after it is detached.

LADDER.—Russell D. Hetrick, William T. Wilson, and Edward Rowe, Indiana, Pa. This is a step ladder in which continuous braces of bent wood engage the steps and the sides, the brace extending from side to side of the ladder, which is very strong and light. It also has a back support with rungs, whereby the ladder may be used by two persons, and the parts are readily separable to form two ladders when desired.

WRINGER ROLLER.—Otto W. Walscheid, Jersey City, N. J. The rubber roller of a wringer has, according to this invention, a bearing sleeve held within it and adapted to turn loosely on the wringer shaft, end nuts screwed into the sleeve being provided with flanges to abut with the ends of the rollers. This construction is designed to overcome the friction strain by the slipping on the shaft of the strain-bearing sleeve of the roller.

BRICK PROTECTOR.—Nils Olson, Superior, Wis. This is an improvement on a formerly patented invention, providing sheds or protectors with folding wings or roofs, that the yard may always be kept dry and work proceeded with in rainy weather. Gutters are arranged to carry away the water shed by the wings or roofs, and means for covering the alleys between groups of protectors, the wings being raised separately or simultaneously as desired.

BOTTLE FILLING APPARATUS.—John Jackson, Ionsdale, R. I. This is an improvement on a former patented invention of the same inventor, providing means whereby a number of bottles may be simulta-

neously filled without spilling, whether transparent or not, there being separate filling tube of correct size for each bottle, and there being connected with the source of supply reservoirs adapted to hold a predetermined quantity, with means for cutting off the connection while the bottles are being filled and turning it on after they are filled.

SCULL PROPELLER.—George O. Adams, Firth, Neb. Two sets of sculling blades are jointed to independent hubs at the rear of the boat and arranged to revolve in opposite directions, with their axes above the level of the water, the blades being arranged to open or expand and descend partly into the water, or to close up partly out of contact with the water. Great effectiveness in propelling may thus be obtained, the boat being steered by rotating only one blade.

ANIMAL TRAP.—Joseph Nelson, Nauvoo, Ill. Sliding between vertical guides of a suitable frame is a weight adapted to be suspended by a bail connected with a pivoted locking arm, the bait being so held that the stepping of the animal upon a tripping platform beneath will free the weight to drop on the animal. The trap is cheap and simple, easily sprung, and especially designed for catching small animals, as rats, mice, squirrels, etc.

Designs.

DRESS TRIMMING.—Julius Dreyfuss, New York City. This design consists of cord figures at each side of a central band figure, the figures appearing connected at each side by transverse cord figures arranged with return effect, a band figure appearing between the groups.

CUT GLASS DISHES.—Daniel Forbes, Brooklyn, N. Y. The designs of two dishes have been patented by this inventor. One design consists in a star formed of two intersecting equilateral triangles forming a hexagonal central field ornamented by a rosette, the apex and exterior angles of the star being also ornamented by rosettes. The other design consists in a five-sided figure having each apex connected by two curved and crossing lines. From each apex also leads a curved line, these lines forming five-sided spaces ornamented by rosettes.

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1. Elegant plate in colors, showing the villa erected for J. Arnoy Knox, at Primrose Park, Mount Vernon, N. Y., at a cost of \$14,928 complete. Floor plans and two perspective elevations. An excellent design.
2. Plate in colors showing the colonial residence of L. Allyn Wight, at Montclair, N. J., erected at a cost of \$15,400 complete. Perspective view and floor plans. Messrs. McKim, Mead & White, architects, New York. An attractive design.
3. A cottage erected at Portland, Me. Perspective view and floor plans. A model design. Cost \$3,400 complete. Mr. J. C. Stevens, architect, Portland, Me.
4. A Queen Anne cottage, erected at Wayne, Pa., at a cost of \$6,000 complete. Floor plans, perspective view, etc. Messrs. F. L. & W. L. Price, architects, Philadelphia, Pa. An excellent design.
5. Engraving and floor plans of a dwelling recently erected for A. B. Root, Esq., at Springfield, Mass., at a cost of \$2,500 complete.
6. Engraving and ground plan of Grace Episcopal Church, at Plainfield, N. J., erected at a cost of \$40,000, complete. Mr. R. W. Gibson, New York City, architect.
7. A dwelling recently completed at Brookline Hills, Mass., at a cost of \$5,120, complete. Perspective elevation and floor plans.
8. A cottage at Elm Station, Pa., erected at a cost of \$3,900, complete. Floor plans and perspective.
9. Wood and stone dwelling at Narberth, Pa. A unique design. Perspective elevation and floor plans. Estimated cost \$5,000, complete.
10. Design for a village library.
11. The Fifth Avenue Theater, New York. View of the family circle and of the handsome drop curtain. Mr. Francis H. Kimball, architect, New York.
12. A suggestion in corner decoration. Bay window decorations.
13. Miscellaneous contents: Wiring of buildings for electric lights.—Montauk club house, Brooklyn, N. Y.—A novel system of domestic water supply, illustrated.—Wood mantels and ornamental fireplaces, illustrated.—Fencing made of sheet metal, illustrated.—The Hartman sliding blind; view of factories.—An improved dimension saw, illustrated.—Plumbers' and steamfitters' supplies.—The Capitol hot water heater, illustrated.

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Notes & Queries

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(5300) Z. B. writes: During the last summer, on the afternoon of a day in August, a large barn was burned here by lightning. The cloud passed over unattended by rain, and the occurrence was most sudden and terrifying. Workmen engaged in the open field in the vicinity, affirm they saw no lightning—a circumstance probably not unusual in similar cases. But they affirm, moreover, that the stroke upon the building was heard in advance of hearing the sound of the thunder. Could this be the fact? A. We see no inconsistency in the occurrence. The thunder may have been produced at a point remote from the barn.

(5301) A. A. F. T. asks: Have any people, apart from the native bushmen of Australia, ever acquired the art of throwing the boomerang successfully? As made by them, is the flat side of the weapon worked to a perfect plane? A. The Australians have brought the boomerang to its highest perfection. Other savage races have used them, but not of anything like the qualities of the Australian weapon. The flat side is not necessarily a perfect plane.

(5302) C. H. A. asks: 1. In making motor of same dimensions as in SUPPLEMENT, No. 641, except the field having but two coils wound on U-shaped core, same placed in upright position, what size and quantity of wire should be used? A. Use in the two coils the same amount of wire as is used in the four coils of the double magnet. 2. What difference would such motor have in speed and power to No. 641? A. There will be practically no difference. 3. Have you published an article on such motor? If so what issue? A. No.

(5303) P. B. P. sends sketch of an insect.—Answer by Professor Riley: The sketch is apparently intended to represent one of the "walking sticks" and probably the "thick-thighed walking stick" (*Diaperomera femorata*). I may be mistaken, as the sketch is crude, and only an examination of the specimen itself will enable a perfectly accurate naming. If it should prove to be the species mentioned, it is one of the most curious insects in our fauna, although not a rare one. It feeds upon the foliage of oak, hickory, and other forest trees. A long account of the life-history of the species will be found in my report as entomologist, Annual Report Department of Agriculture, 1878, pages 241-245.

(5304) A. G. L. asks: How should cut flowers be packed for mailing that will be four or five days in transit? A. In tin boxes, with a sheet of cloth well dampened with water.