RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—Fred Kerlin, Columbia, Pa. With this coupling the cars couple automatically as they come together, and the uncoupling may be effected either from the top or the sides of the car, or by the engineer. The coupling pin is held in an upper position by a spring-seated pin which is removed from beneath the pin by the entrance of the link, allowing the pin to then drop through the link to couple the cars.

STREET CAR TRUCK.—Ferdinand E. Canda, New York City. A novel combination of an elliptic and a coiled spring, the one above the other, with other features of construction and arrangement of parts, are distinguishing features of this invention, which is designed to secure an easy spring movement, whether the car is running light or heavily loaded, and also allow a yielding lateral movement of the car axles and car body relatively to one another, thus avoiding shocks to the body of the car in rounding the sharp curves made in street railways. The weight of the car is also uniformly distributed to all the supporting springs.

Mechanical.

FILING BLOCK. — Edwin A. Brush, Hydesville, Cal. This is an improvement in blocks adapted to be held in a vise to support a wire or other article to be filed, the block being such as the vise will take a firm hold of, and having a finely adjustable slide plate to hold wires of many sizes, and form a substantial support for the wire. It is also adapted to form a perfect support for holding any flat, thin metal, to be filed, or for use in filing squares or as an anvil, while it may also be used as a templet.

CLAMP DEVICE.—John R. Hime, Sr., and Willis B. Cox, Savannah, Ga. This device comprises a yoke-shaped clamp member, formed preferably of wrought iron, through the eyes of which are passed an iron bolt or shaft, which also passes through and adjustably connects the clamp with a friction block. The device is adapted for use in repairing wharves, sheds, trestles, bridges, etc., and can be quickly and easily applied and used for joining such parts of the structure as need be drawn or held together.

STAVE CUTTING MACHINE.—William Nier, Kansas City, Mo. This is a continuously operating machine in which a revolving head block shaft and head block are journaled on a supporting frame carrying a reciprocating carrier holding a rotary form block with radially projecting adjustable cutters. The cutting knife and form block are automatically moved toward the block from which the stave is cut, there being means to reverse the operation automatically, and to insure the cutting of the staves the proper length and width. The machine is of simple and inexpensive construction, positive in its operation, and under the perfect control of the operator.

BARREL HEAD CUTTING MACHINE.—This is a further improvement of the same inventor, the machine comprising a main frame or table with rotary cutter passage, an upper cutter, a vertical rotary shaft having at its lower end a knife-carrying disk held just above the passage in the table, below which is held another vertical shaft having at its upper end a knife-carrying disk. A foot lever mechanism raises the lower shaft and cutter against the board to force it against the upper cutter. The machine is adjustable to cut heads of different thicknesses.

Electrical.

DISTRICT TELEGRAPH CALL.—William H. Garven, Portland, Oregon. In the call box, according to this invention, there is a cam on the winding shaft, and a slide bar adjusted by the cam according to the movement of the shaft, whereby a plate bearing pictorial illustrations of the different calls, as for messenger, police, fire department, carriage, express, etc., may be progressively brought to view, according to the throw of the winding shaft and cam. The call goes to the central office on two different circuits, is printed by different registers, and the box also notifies the party sending of the receipt of the call.

Miscellaneous.

STOVE FOR BURNING GAS.—Donald McDonald, Louisville, Ky. The burner of this stove consists of two tubes, one within the other, having registering perforations, the outer tube having a draught regulator to control the amount of pure air fed in between the two tubes, and the inner tube having a gas and air mixing device regulating the amount of air mixed with gas in the inner tube. The gas is burned in a perfectly air-tight chamber, with only so much air as is necessary to perfectly burn it, this air being furnished at exactly the right point, and the products of combustion being then utilized to heat the room before being sent up the chimney in a comparatively cool state.

PEN RACK.—Hiram D. Pierce, Cleveland, O. This is a combined rack and pen cleaner, an outer frame forming the rack proper, of open book-like construction and holding a series of leaves, meeting at the bottom but spread apart at the top to receive the pen between them.

HAME HOOK. — William W. Miller, Memphis, Tenn. This invention consists principally of a fixed plate having a hook and a pivoted lock plate having a tongue adapted to swing over the fixed plate hook to lock the trace ring or link in position. The hook is double, allowing the use of either hook at a time, and it is designed to securely hold the trace link or ring in place, without danger of accidental displacement, although the unhooking may be conveniently effected when desired.

PHOTOGRAPHIC TRAY ROCKING MACHINE. — Joseph Hess, Mifflintown, Pa. A rocking table top is, according to this invention, held in an open frame, pivot pins at opposite ends being journaled on the frame, and mechanism being provided for giving an oscillating motion to the top. The device affords efficient means for developing negatives or toning and fixing prints, allowing the operator the free use of his hands for inserting or removing plates or prints.

PHOTOGRAPHIC PRINT MOUNTER.—Harvey A. Lesure, Keene, N. H., and Delano D. Dunklee, Greenfield, Mass. This mounter has a base portion adapted to receive a photograph card in guides, whereby the card will come beneath a vertically movable platen provided with an absorbent pad, to take up moisture squeezed from the print, leaving the latter perfectly smooth and well stuck to its card, under an even pressure.

SHOULDER BRACE. — Walter Greenshields, Auckland, New Zealand. This is a device more especially designed for the use of women and children, to properly hold back the shoulders and expand the chest, giving also proper support to the back. It is composed of two similar elastic straps, with fastening devices, each strap being in the form of a loop to embrace the shoulders, and the extended ends being crossed at the back and meeting in front at about the waist.

TUBULAR KEY AND PNEUMATIC VALVE ACTION FOR ORGANS. — Peter Baggstrom, Brooklyn, N. Y. According to this invention the valve arrangement in the wind chest is so constructed that the valves may be manipulated by a light touch on the keys to produce a prompt speech from the tubes, the action being particularly advantageous for utilizing the coupling at present used between the several keyboards. The organ valve action is also so improved as to need no regulation, there being nothing in its structure to get out of order.

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.

SCIENTIFIC AMERICAN BUILDING EDITION.

SEPTEMBER, 1894.—(No. 107.)

TABLE OF CONTENTS.

1. An elegant plate in colors, showing a Colonial residence at Portchester, N. Y., recently completed for Geo. Mertz, Esq. Two additional perspective views and floor plans. An attractive design. Mr. Louis Mertz, architect, Portchester, N. Y.
2. Plate in colors showing a residence recently completed for R. H. Robertson, Esq., at Southampton, L. I. Two perspective elevations and floor plans. A picturesque design and an admirable model for a seashore cottage. Mr. R. H. Robertson, architect, New York City.
3. Residence of Frederick Woollven, Esq., at Rosemont, Pa. Two perspective elevations and floor plans. A neat design in the Colonial style. Cost complete $4,800. Mr. J. D. Thomas, architect, Philadelphia, Pa.
4. A cottage at Roger's Park, Ill,, recently erected for Edward King, Esq. Two perspective elevations and floor plans. A unique design. Mr. Geo. W. Maher, architect, Chicago, Ill.
5. Cottage at Hollis, L. I., recently completed for the German-American Real Estate Co. Two perspective elevations and floor plans. Cost complete $3,200. Mr. Edward Grosse, builder, same place.
6. Perspective elevation with ground plan of Saint Gabriel's Chapel, recently erected at Hollis, L. I. A unique and most excellent plan for a small chapel. Cost complete $6,500. Mr. Manly N. Cutter, architect, New York City.
7. Two perspective elevations and an interior view, also floor plans, of a residence recently erected at Orange, N. J., for Homer F. Emens, Esq. Mr. Frank W. Beall, architect, New York City. A pleasing design in the Colonial style.
8. Perspective elevation and floor plans of a cottage recently erected at Flatbush, L. I., for F. J. Lowery, Esq. Cost complete $4,600. Mr. J. C. Sankins, architect and builder, Flatbush, L. I.
9. A residence at Yonkers, N. Y., recently completed for Mrs. Northrop. A very unique design for a hillside dwelling. Perspective elevation and floor plans. Messrs. J. B. Snook & Sons, architects, New York City.
10. Club House of the Sea Side Club, Bridgeport, Conn. A good example of Romanesque style. Perspective elevation and floor plans, also an interior view. Messrs. Longstaff & Hurd, architects, Bridgeport, Conn.
11. A residence at Hinsdale, Ill., recently erected for C. E. Raymond, Esq., at a cost of $7,000 complete. Perspective elevation and floor plans. Mr. J. H. Shannon, architect, Hinsdale, Ill.
12. The Castle of Bonnetable. Half page engraving.
13. Miscellaneous Contents: The irrigation of laws, illustrated with two engravings.—Viaduct for street railways, Cincinnati, Ohio, illustrated.—The fireproof building construction of the New Jersey Wire Cloth Co., illustrated.—Silvester's remedy against dampness.—Palmer's "Common Sense" frame pulley.—"The Old Hickory Chair," illustrated.—An improved hot water heater, illustrated.—The Caldwell Tower, illustrated.—The American Boiler Co.—The "Little Giant" floor clamp, illustrated.—The Akron air blast furnace.—Laundry glaze.—The "Piqua" metallic lath, 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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(6225) T. H. writes: You will receive by mail an insect possessing features of a peculiar nature. By request I send it to you. It has what might be called a tail resembling a horse hair which it extends to a length of 4 inches at times and retracts it until it is scarcely perceptible. Nobody that has seen it ever saw anything like it, and it is sent with a view of hearing something about it from the SCIENTIFIC AMERICAN. A. The insect sent is one of our largest ichneumonids and is known scientifically as Thalessa atrata. In Insect Life you will find a full illustrated account of this insect. For this reply we are indebted to Dr. F. H. Chittenden, Acting Entomologist, Department Agriculture.

(6226) L. F. says: In my kitchen and the bathroom above are so-called cockroaches, a small black insect. Have tried all kinds of insect powder, but cannot drive them away. How can they be driven away? A. Borax is the best cockroach exterminator. The insect has a peculiar aversion to it, and it is said will never return where it has once been scattered. As the salt is harmless to human beings, it is much to be preferred to the poisonous substances commonly used.

(6227) W. H. C. says: Will you please explain to me through your paper why a glass or metal vessel filled with ice water and set in a hot room sweats? And also give me the best known definition of electricity? A. The name sweating is a misnomer, and should only apply to the issuance of moisture from the interior and its accumulation upon the surface, naturally from the skin and artificially from porous earthenware filled with water. The moisture and water upon the surface of ice pitchers or any cold article exposed to a warm, damp atmosphere is a condensation of the moisture in the air upon its surface by the cooling of a thin stratum of air in contact below the dew point, or the temperature at which the air becomes over-saturated, when the excess of moisture adheres to the cold surface, and in turn by further cooling makes a cold water surface in contact with the circulating air and thus accumulating the water of condensation until it no longer adheres, when it runs down in drops. The latest accepted theory as to the nature of electricity is that in all its phases or names it is only a varying condition of pulsations or wave motion similar to light pulsations having a greater length, but propagated at about the same velocity as light.

(6228) H. F. W. asks: 1. Does the velocity of a projectile shot from a firearm (either rifled or smooth bore) increase till the projectile has gone a certain distance from the firearm? A. The velocity of a projectile only increases until it clears the gun, at which point the resistance of the air commences to retard its velocity. 2. Is it known whether the gastric juice acts as rapidly on albuminous substances when diluted in a considerable quantity of water as it does when diluted in a small quantity of water? A. The gastric juice acts best on albumen when diluted with water only sufficient to make it fluid or to flow quickly.

(6229) C. E. B. writes: We have a metallic circuit telephone line about five miles in length using Bell's receivers as transmitters. The line runs parallel and almost under a telegraph line for about a mile; the part parallel to the telegraph is transposed every ¼ of a mile. Will transposing the other four miles reduce the effects of the earth currents? A. Yes; and if you were to use a twisted cable, it would be still better. When you say earth currents, we suppose you mean induction.

(6230) G. D. M. asks: What size air vent is required to allow water to fall through a 6 inch pipe to run freely? What is the minimum size pipe without, by reason of its size, affecting the capacity of the flow from such 6 inch pipe? A. As air issues through an orifice from 35 to 40 times the velocity of water under the same conditions of pressure, the air vent should be from 35 to 40 times less area than the water discharge orifice, so that if the whole area of the 6 inch pipe is to have a maximum flow, the vent should be $\frac{\text{Area}}{35}$ or $\frac{28}{35}$ = 0·8 of a square inch orifice, or a hole about 1 inch diameter, and in proportion for any size orifice for discharge of water. Seven-tenths of a square inch would be the minimum size for a full flow, as above, under favorable circumstances.

(6231) J. F., Ontario, writes: There is a flat roof in this town covered with leaded tin, and I wish to put a galvanized iron covering on over the old tin one, as it will be more convenient to do so, the old one keeping out rain while the new one is going on. What I am in doubt about is this: Will there be any possibility of chemical or electrical action taking place, so as to destroy the galvanized iron? A. There is no objection to the placing of a galvanized iron sheeting directly upon the old tin roof. Condensation, if any, will take place on the under side of the tin, and will not injure galvanized iron as much as if the condensation takes place upon the galvanized iron. The contact or small space between the two roof sheets will be too small to allow of condensation that will do any harm by rust or electrical action, which will be very feeble with dry surfaces in contact.

(6232) T. S. C. asks how to make a lubricator for burnishing photographs.

A.

1. Paraffine..... 8 drm.
Benzine.....10 oz.

B.

Gum ammoniacum.....30 grn.

Alcohol, quantity sufficient to prevent the gum from sticking to the pestle while grinding the gum in a mortar. Add A and B together, and shake well, and apply with a flannel or rag. The above gives a fine polish.

2. Lubricator for Hot Burnishing.

Cetaceum.....	1 part.
Castile soap.....	1 "
Alcohol.....100	"

(6233) A. J. C. says: How may tattoo marks be removed? A. Dr. Variot, of the Paris Biological Society, advises the following method: Tattoo the skin, in the usual way, with a concentrated solution of tannin, following the original design. Then apply a crayon of nitrate of silver until the part tattooed with the tannin blackens. Wipe off excess of moisture and allow matters to take their own course. Slight pain continues for two to four days, and after two months the cicatrix which results will almost disappear.

(6234) F. F. C. asks how to make a composition for padding paper? A. The regular composition used is made from best glue and glycerine and water colored with aniline. This needs heating. A solution of gum tragacanth with a little glycerine might answer your requirements, but we advise the first. For 5 pounds of dry glue allow 1 pound of glycerine.

(6235) C. H. T. says: How can I produce ozone in a simple way? A. Ozone may be easily produced by means of an aqueous solution of permanganate of potash and oxalic acid. A very small quantity of these salts placed in an open porcelain dish is all that is necessary, the water being renewed occasionally, as it evaporates. Metallic dishes should not be used.

(6236) R. L. J. asks how to prepare fire kindlers? A. Dip the wood in melted resin. The following composition is sometimes used: 60 parts melted resin and 40 parts tar, in which the wood is dipped for a moment. Or, take 1 quart of tar and 3 pounds of resin, melt them, then cool; mix as much sawdust with a little charcoal added as can be worked in. Spread out on a board, and when cold break up into lumps the size of a hickory nut, and you will have enough kindling to last a good while.

(6237) B. C. U. says: Can you give me a method for cleaning nickel plated signs? A. Rouge, with a little fresh lard or lard oil, on a wash leather or piece of buckskin. Rub the bright parts, using as little of the rouge and oil as possible; wipe off with a clean rag slightly oiled. Repeat the wiping every day, and polish as often as necessary.

(6238) H. J. M. says: Can you inform me how I can render corks impervious? A. Bousquet's Patented Process.—The corks should be heated to 212° Fah., in order to kill any spores which they might contain. While the corks are hot dip them in a solution of 1 part albumen (egg or blood albumen) in 200 parts water; afterward dip in another solution composed of 1 part tannic acid, ½ part salicylic acid, and 200 parts water. Tannate of albumen is formed in the pores of the corks. Salicylic acid acts as an antiseptic.

(6239) A. A. H. says: What is the record for the voyage between New York and Liverpool? A. The fastest trip on record between Sandy Hook and Daunt's Rock was made by the Lucania on the trip ending Sept. 14, 1894; time, 5 days, 9 hours and 45 minutes. On the preceding voyage of the same vessel (westward) the time was identical, but the eastern course was longer, so that the speed was greater.

(6240) W. A. J. asks for an adhesive paste. A. Take 4 oz. common gelatine in small pieces and steep it in 16 oz. water until it becomes soft; then by the aid of the heat of a water bath dissolve it; and while still hot pour into a mixture of 2 lb. good flour paste and 1 pt. water. Heat the whole to boiling, and when thickened remove from the fire; while cooling add 6 drm. silicate of soda and stir into the mixture with a wooden spatula. This preparation will keep good for an indefinite period, and is very adhesive. The addition of 2 drm. oil of cloves is an improvement.

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