

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

CAR COUPLING.—John La Burt, New York City. With this device the cars will couple automatically, so that it will not be necessary for the brakeman to go between them, while they may be easily uncoupled, the link having a laterally curved coupling arm, and a rearwardly curved arm with a slot engaged by a pin moving vertically in the drawhead, a lever mechanism connected with the pin extending to the top and sides of the car.

Mechanical.

NUT TAPPING MACHINE.—Clarence L. Chapman, Erie, Pa. This invention covers an automatic device for removing the nut blanks singly from the hopper and delivering them regularly in proper position to the tap, which is automatically fed and lifted, and removed from the spindle to dump the threaded nuts, the machine cutting the thread in punched blanks without any manual labor except filling the hopper with blanks.

CARVING MACHINE.—Joseph Rohlmann, St. Joseph, Mo. This is a machine adapted to carve simultaneously a number of blocks after one pattern, there being combined, with the frame carrying the cutters and tracing tool, universal joints supporting the ends of the frame, pivoted brackets supporting the joints, and a counterbalanced lever connected with the free ends of the brackets, a pivoted arm carrying a shaft on which the lever is pivoted, with other novel features.

SPRING MOTOR.—Daniel B. Merry and William M. Shelman, East Las Vegas, New Mexico. This is a device for running sewing machines, etc., and is so constructed that a series of springs, all having connection with one drive shaft, may be wound from one stem, the springs being so arranged that when one spring is unwound it will release the next for unwinding, the idle springs not retarding the movement of the drive shaft.

Miscellaneous.

LAMP BLACK MANUFACTURE.—Robert Dreyer, Halle-on-the-Saale, Prussia, Germany. This is an apparatus for the manufacture, in which a series of closed reservoirs communicating with each other are supplied with a cooling liquid, while a hollow rotary shaft carries burners and scrapers below the reservoir, to produce lamp black, carbon black, etc., from carbureted hydrogen gases or suitable oily or fatty substances, at the same time utilizing the heat generated during the process.

ROTARY GAS SCRUBBER.—William Mooney, North Plainfield, N. J. The scrubbing frames, consisting of segmental and transverse perforated plates, and rods or spindles, are carried by wheels revolving in a tank supplied with water, whereby the frames will be kept wet, and will mechanically remove from the gas passed through them any tarry matters, ammonia and carbonic acid remaining in the gas being taken up by the water.

WATER GAUGE.—Ira A. Fuller, Pepin, Wis. This is a device designed to give notice of the rise of water in the hold of a barge or ship, and is made with a float in a vertical case having an attached scale which appears at a window, there being also an electric bell and battery whose circuit is closed by the rising of the float.

DRAWING INSTRUMENT.—George A. Brown, Park City, Utah. This instrument has a fixed base plate on which a T-square is held for longitudinal movement, a protractor being detachably connected to the blade and having a longitudinal movement on it, with other novel features, making a convenient drawing instrument which can be readily adapted for architectural or surveyors' uses.

WIRE REEL.—George E. Dixon, Beacon, Iowa. This is a combined reel and stretcher, light and durable, and so made that the reel will be locked when rotation in a certain direction has ceased, preventing slack or unwinding, and making a serviceable device for the construction and repair of wire fences, equally adapted for barbed or smooth wire.

SELF-CLOSING CAN.—Stephen O. Myers, Mount Vernon, N. Y. By this invention a spring-pressed valve is adapted to close the neck of the can from the inside, the construction being simple and durable, and the can being designed to hold ether, chloroform and other liquids, which will thus be prevented from spilling, no matter in what condition the can is left.

PIANO PEDAL AND GUARD.—Walther T. Stirnberg, New York City. This pedal is made with laterally projecting shoulders, practically concealing the slot through which the pedal passes, while the guard plate combined therewith protects the polished face of the case and is designed to give a more than ordinarily attractive appearance to the front of the instrument.

VENETIAN BLIND.—Charles Niss, Jr., Milwaukee, Wis. The supporting frame or receptacle for the slatted blind is provided by this invention with novel devices for supporting and adjusting the slats, either to elevate or depress them, or to rock each slat edgewise when the blind is in lowered adjustment.

FIRE ESCAPE.—Samuel M. Stevenson, Bastrop, La. This escape is made with a double-walled fireproof car, a transverse shaft in which has a friction drum and flanged pulleys, in combination with fireproof ropes and a brake mechanism, etc., whereby attachment may be made to an upper window of a structure, and its occupants safely and speedily lowered to the ground when other avenues of escape have been cut off.

CLOTHES PIN.—Charles A. Ostrom, Hans H. Thiellesen, and Samuel C. Wampler, Custer City, South Dakota. This is a spring wire clamp, the ends of a spring wire being formed into jaws having

sides inclined toward each other, a slide engaging the sides to open and close the jaws, and a spring catch locking the slide in place, the device being exceedingly simple, strong and efficient.

WASTE PIPE.—Thomas Keely, Memphis, Tenn. This is an improved attachment for refrigerators in which a drip pipe projects downward into a waste pipe proper, but is not arranged in contact with it, there being combined with the outer pipe an inner drip pipe having an inwardly curved point terminating in the center line of the pipe.

WATER CLOSET CISTERN.—Charles G. Zeitman, Albany, N. Y. This invention provides a cistern designed to be very sensitive and positive in operation, to prevent all leakage and overflow, a pipe sliding on a stationary overflow pipe to form an extension thereof, while a float is supported on the pipe and a siphon held on the float to charge and empty the siphon, the construction being simple and durable.

BACK BAND.—Willie L. Johnson, Lake City, Miss. This is an improvement in back bands for plow harness, and provides a combination of buckles and snap hooks and movable connections whereby the height of the traces may be quickly adjusted and the draught so regulated as to increase or diminish the depth of the furrow cut by the plow.

STIRRUP.—George A. Kerns, Victoria, Texas. This stirrup consists of a struck-up metallic body portion with outwardly projecting flanges, leather covering and securing pieces, and other novel features, designed to afford a stirrup of great strength and lightness, and which will also be ornamental and inexpensive to manufacture.

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
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TABLE OF CONTENTS.

1. Handsome colored plate of an elegant residence on Riverside Avenue, New York City. Cost \$60,000 complete. Floor plans, two perspective elevations, etc. Mr. Frank Freeman, New York, architect.
2. Plate in colors showing an attractive cottage at Maplewood, Chicago. Estimated cost \$3,000. Perspective view and two floor plans.
3. A cottage at Rutherford, N. J., erected at a cost of \$6,000 complete. Perspective elevation, floor plans, etc.
4. An elegant residence at Chestnut, Hill, Pa., recently erected for Mr. Alfred C. Rex. Cost \$30,000 complete. Floor plans, perspective elevation, etc.
5. Sketch and floor plans of a residence at Stockton, Cal. Estimated cost \$10,000.
6. Cottage at Englewood, Chicago. Perspective view and floor plans. Cost \$4,200.
7. Residence on Powelton Avenue, Philadelphia, Pa. Cost \$30,000 complete. Architect Thos. P. Lonsdale, Philadelphia. Floor plans, perspective elevation, etc.
8. A cottage at Jackson Park, Chicago. Estimated cost \$4,000. Floor plans, perspective elevation, etc.
9. Cottage on Munroe Avenue, Chicago. Two floor plans and perspective view. Cost \$900.
10. Residence at Wayne, Pa., from plans prepared by W. L. Price, architect, Philadelphia. Cost \$7,000 complete. Floor plans, perspective view, etc.
11. An attractive country church of moderate size recently erected at Glen Ridge, N. J. Estimated cost about \$15,000. Perspective view and floor plan.
12. Cottage at Lakeview, Chicago. Floor plans and perspective view. Cost \$3,000.
13. A stable combining both beauty and convenience, erected for Mr. A. C. Rex, at Chestnut Hill, Pa. Cost \$1,800. Plans and perspective.
14. A cottage at Austin, Chicago, Ill. Cost \$4,300. Two floor plans and photographic view.
15. Sketches of park entrance lodges.
16. Engraving of the Woman's Temperance Temple, Chicago, Ill., as it will appear when finished. Estimated cost of the Temple \$1,100,000.
17. View of Whitworth Memorial Hospital.
18. Miscellaneous contents: The marble industry.—Lighting streets of London.—Mahogany ties and marble bridges.—Staining floors.—The Peruvian temple of Pachacamac.—How to catch contracts.—Black birch.—Some of the merits.—Improve your property.—The SCIENTIFIC AMERICAN a help to builders.—An improved article for plastering, tiling, and cement work, illustrated.—The Sinclair double rocker, illustrated.—An improved veneer press, illustrated.—Our last year's volume.—The Albany Venetian blinds, illustrated.—A convenience for hospitals, families, etc., illustrated.—The education of customers.—The Buffalo hot blast heating system, illustrated.—The "Willer" sliding blinds, illustrated.—Mueller's water pressure regulator.—Artistic wall decorations.

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Notes & Queries

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Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

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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Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(2728) J. F. W. asks: If there is a substance, as elastic and equally as good otherwise, as India rubber. A. No. The substitutes treated of in our SUPPLEMENT, Bolas' lectures on India rubber, etc., are but poor apologies for the true article.

(2729) T. A. M. asks: Could a hollow airtight float for a steam trap be practically made, thereby doing away with the hollow spindle, opening to the outside, which is the common form? Would the condensation of the inclosed air reduce the buoyancy of the float, or necessitate a much heavier metal to withstand the steam pressure? Would it be practical to fill the float with some buoyant gas, under pressure enough to equalize that of the steam? What would be a good battery for electroplating small articles, such as keys, etc.? A. Hollow ball floats are now used for steam traps. You require no gas or other substance in them. Only make them heavy enough and perfectly tight. The difficulty in making them tight is the reason that they are not generally used. Any of the batteries described and illustrated in SCIENTIFIC AMERICAN SUPPLEMENT, Nos. 157, 158, 159, will answer for electroplating, 10 cents each mailed.

(2730) R. T. B. asks: Will you please give me a recipe for making moulds to work plaster ornaments, known in the trade as gelatine? Its proportions in bulk, weight or measure. A. Good glue soaked and swelled. Pour off excess of water. Mix, glycerine six times the weight of the dry glue used. Heat and evaporate water sufficient to make the mixture of the proper consistency.

(2731) R. says: I cannot wear flannel drawers without experiencing the most intolerable itching, chiefly along the front of the leg between the ankle and the knee, but more or less over the whole leg. It commences at about the end of the first ten days after putting on the flannel, and continues for a month after it is taken off, even though left off at the end of the first two weeks of wear. The skin shows no sign of irritation, save what follows from scratching. The intense itching makes it absolutely impossible to abstain from scratching. This is caused by the best quality of Dr. Jaeger's natural wool, as well as by ordinary flannel and cotton, half of each. As to red flannel, it is worse, if anything could be more disagreeable. I could as well wear the shirt of Nessus. The flannel shirt is not so bad, though it does cause an itching of the forearm. Be kind enough to answer through your Notes and Queries: 1. What causes this effect? 2. The flannel, and it is a personal idiosyncrasy. 2. What will prevent it, the flannel still being worn? A. Nothing; perhaps by silk or linen underwear interposed between wool and skin. 3. What will allay the itching within any reasonable time? A. Leaving off flannel or wool, or according to suggestion in No. 2. 4. If it cannot be prevented, flannel being worn, what substitute, not subject to the same objection, for the flannel can be worn in cold weather? A. Silk, or following No. 2.

(2732) P. C. asks: 1. Which is the most convenient shade to be given to the walls of a photographic darkroom? A. An orange red color. 2. How

should the glasses of its window be coated, and which is the most expeditious way to do so? A. Insert between two plain glass windows fine sheets of oiled post office paper. This makes a safe light. 3. Would you give the receipt for a good gold paint to be applied with a brush to iron or wood? A. Use bronze powder, applied with copal varnish. As a permanent mixed paint use lined oil and japan as vehicle.

(2733) G. N. asks: 1. Can a boiler explode with plenty of water, and what would cause it to explode? A. A boiler may explode by over-pressure or by becoming too weak at some point for the pressure. 2. Which explosion would have the greater force—a boiler with low water and a high pressure of steam or a boiler with high water and high pressure of steam? A. Undue pressure, by the sticking of the safety valve, has often been fatal. A full boiler is more disastrous than one with low water, when it explodes, owing to the steam liberated from the larger body of water. 3. How much coal does the City of Paris consume on a trip across the Atlantic? A. The great steamers consume 200 to 350 tons of coal for 24 hours.

(2734) S. F. S. asks: 1. Is it not possible to telephone as far as to telegraph? Why not? A. On account of the escape along the line of the secondary current used in telephony. Also on account of induction and earth currents and time required for static charge and discharge of line. 2. If copper wires instead of platinum were used in incandescent lamps, would the expansion of the wire be too great or not great enough to correspond with the expansion of the glass bulb? A. For 1° in a length of 100 feet glass expands 0.000574 inch, platinum 0.000571, and copper between 0° and 212° 0.00115 for each degree.

(2735) F. G. asks: 1. Is there any danger of an explosion when nitric and sulphuric acids are mixed together in equal parts without being reduced to the temperature that they usually are when used for nitroglycerine? A. No. 2. If the glycerine was added suddenly, would it not cause an instantaneous explosion? A. Probably not, as mixture would be required. 3. If it would cause an instantaneous explosion, would the effect be as great as if it had been manufactured into nitroglycerine? A. No. 4. Why is there more silver in a standard dollar than there is in two half dollars? A. The subsidiary coin is only a legal tender for amounts up to and less than \$10. Its value is statutory for these cases. The dollar is legal tender for unlimited amounts.

(2736) E. asks: 1. What is the difference, if any, between ordinary coal gas and that produced from gasoline, and what are the elements and signs of each? A. Gasoline gas is of far higher specific gravity (0.800 or more) than coal gas (0.450 to 0.500). It contains more carbon and differs in odor. 2. How can one produce chemically the different constituents of coal gas, separately, and then combine them to produce a gas equal or like coal gas? A. This is hardly practicable on the large scale. The chemical manuals tell how to prepare hydrogen marsh gas, olefiant gas, and carbonic oxide. These can be mixed so as to closely approximate to coal gas. 3. Would the act or operation of manufacturing them separately and combining be attended with more danger than the handling of coal gas? A. Yes; it would multiply operations, and there would be much more danger of explosions, etc.

(2737) A Subscriber asks: Would you have the kindness to publish the recipe for the painless extraction of teeth? A. The best known method is the use of nitrous oxide or "laughing gas." It has been used in hundreds of thousands of cases, and no deaths have occurred.

(2738) J. H. asks for a good cement to fasten square gold and silver wire inlaid in wood. A. Try marine glue or bicycle tire cement. Do not use common glue, as it will never adhere.

(2739) S. E. L. writes: I have a meerschau pipe; the stem is broken off; please write me what I can use to mend it. A. Dissolve caseine in water glass. You may mix with it some powdered meerschau or even carbonate of magnesium. Prepare the caseine by curdling skimmed milk and filtering out the precipitate and afterward washing it thoroughly. Also see next query.

(2740) H. C. C. asks: 1. What is the best cement (or how to make it) for mending and repairing broken glass, porcelain, crockery ware, etc., that will be (near) water and fire proof, or that will hold together strong and lasting? A. One-third of a pint of milk is curdled by adding vinegar. The whey is taken and the white of an egg is stirred into it. Finely divided quicklime is added and the mass is thoroughly mixed with a knife or spatula and applied to the surfaces. After drying in air it is heated over a stove or in a rather cool oven. 2. How to bend on shape an amber tube such as the stem or mouth piece of a smoking or tobacco pipe. A. Slight heating softens amber, but it is dangerous to attempt to bend it unless you have had experience. 3. How best to clean a meerschau and briar root pipe. A. For cleaning a meerschau pipe see queries No. 2364 and 2474. For a wooden pipe simply scrape, buff, and sandpaper it. 4. What is the best or good book of practical receipts for mechanic, for mending and repairing household articles, etc.? A. The "Techno-Chemical Receipt Book," \$2; "Workshop Receipts," 4 vols., \$8; "Dick's Encyclopedia," \$5.

(2741) W. L. G. asks: How can plaster of Paris casts be cleaned, without being affected as they are by water? A. There is no good way short of rubbing with ground pumice or very fine sand paper. Various methods of rendering them impervious are given in the receipt books, a polish being imparted that enables them to be satisfactorily cleaned. Otherwise the best plan is to keep dust off, as once it has obtained a hold it adheres tenaciously.

(2742) N. A. asks how much wire is required to wind sewing machine motor as described in SUPPLEMENT, No. 759; how much for field, No. 16 double C C, and for armature, No. 20 double C C magnet wire? A. About 3½ pounds of No. 16 wire for the field magnet and ¾ pound No. 20 for the armature.

(2743) G. B. J. asks one or more of the best formulas or processes of waterproofing compressed