

RECENTLY PATENTED INVENTIONS.

Railway Appliances.

**CAR COUPLING.**—Charles E. Seabury, Stony Brook, N. Y. This device is designed to be simple, inexpensive, and automatic, whereby the cars may be coupled without requiring the train men to go between them, the coupling being also adapted to connect with the common link and pin drawhead.

**CAR COUPLING.**—Albert B. Evenden, Watertown, N. Y. This is a coupling also adapted for use with cars having the ordinary link and pin coupling, and with cars of different heights, the drawbar head having a hook or hooks upon its top, while there is a link secured to the head by a pin and slot connection and a joint in the link intermediate of its length, with other novel features.

**CAR HEATER.**—Charles O. Newton, Homer, N. Y. In accordance with this invention a hot air chamber extends under the entire floor space of the car, the steam pipe extending through such chamber under the central aisle, the exhaust pipe inclosing the steam pipe, and the invention covering various novel features of construction and combinations of parts.

Miscellaneous.

**SAND BAND.**—Humphrey Trembath, Ewart, Mich. This is a guard for excluding sand, mud, and dust from the hubs of wheels and the spindles of axles, and has a hood in the form of a truncated cone with an open lower side, and large enough to allow the hub to revolve freely within without touching it, the hood being so hinged as to be freely raised for oiling, etc.

**VEHICLE GEARING.**—Paris Erb, Newport, Pa. This is an improvement in fifth wheel construction, the fifth wheel having its lower section provided with sockets or bearings and the clips having pivot studs or gudgeons adapted to fit in the bearings, whereby in descending a grade the vehicle will push forward and operate to tilt the axle back, and the shafts will be prevented from rising, and on a level or uphill grade the draught will turn the axle to hold the shafts up.

**SLED KNEE.**—John Ammon, Stoughton, Wis. This is a knee formed of plate metal, with upright, side, and top or crown portions, the upright portions being curved in cross section while the top or crown portion is curved or arched upward from side to side, the construction being designed to increase the strength and strain-resisting power of the knee.

**BOB SLED.**—Sven Legreid, Stoughton, Wis. This is an improvement designed to simplify and strengthen the rave attachment, the attachment having its base portion adapted to the upper end of a sled knee, and having its upright portions curved or arched in cross section, the attachment supporting the rave at its upper end, to which it inclines outward, and the beam being supported at its end therein.

**NAIL KEG.**—Henry E. Spilman, Spilman, West Va. This keg is composed of a transversely corrugated sheet metal cylinder, having detachable wooden heads made in sections, and adapted to be locked in end grooves formed by the corrugations, by being rotated about the axis of the keg.

**MACHINE FOR HOOPING AND HEAD-ING KEGS.**—Theodore A. Cook, Brooklyn, N. Y. This machine has a header plate and a reciprocating upper table, in combination with a flange attached to the table to surround the barrel, a plate within the flange and spring-actuated hoop drivers pivoted therein, with other novel features, the machine being more especially designed for hooping paint kegs, etc.

**VENTILATING BARREL.**—John F. East, Norfolk, Va. This barrel is composed of a veneer blank cut through its middle, with transverse parallel slits, leaving the edges of the blank continuous or unsevered, while the middle portion is expanded to give the curve to the barrel and form ventilating openings.

**BELT REPLACER.**—Frank Balderson, Oketo, Kansas. This invention consists of a segment adapted to be clamped to the rim of the pulley and to project in line therefrom, a curved arm being pivoted to one end of the segment, the device being simple and durable, and calling for but little labor to place the belt on the pulley or wheel.

**DISCHARGE VALVE FOR SEWER PIPES.**—Charles H. Shepherd, New York City. This is an automatically operating valve designed to open under a given pressure of water, and close as soon as the water is discharged, the invention covering novel features of construction and arrangement of parts.

**GRADING AND DITCHING MACHINE.**—Rector M. Thompson, Crawford, Neb. This is a machine in which the scoop is designed to be expeditiously elevated when loaded, carried above the surface of the ground and readily dumped, there being a frame with an attached caster wheel at the rear of the scoop, taking the weight off the team and preventing dirt falling from the scoop when elevated and loaded.

**MOTOR.**—Frank L. Gilbert, Conroe, Texas. This is an actuating lever mechanism to be attached to a loose seat board mounted on an ordinary stool or high chair, and adapted to convert the slow downward movement of the seat when occupied by an operator into a rapid rotary motion for the running of a sewing machine or similar purpose.

**OVEN SLIDE.**—Harry T. Gilbert, Philadelphia, Pa. This invention consists of a hinged extension plate provided with a cam edge, a vertically arranged shaft having a cam arm adapted to engage the cam edge, and an arm secured on the shaft and operated on by the closing of the stove door.

**SCRAPER FOR ROLLER MILLS.**—John Harvey, Brooklyn, N. Y. This is a device for the removal of crushed grain from the rolls of a roller process mill, and is adjustable and non-abrasive in contact, while designed to be thorough in operation and avoid all danger of fire from its action on the rolls.

**HORSE POWER APPARATUS.**—Oscar Johnson, Lindsborg, and Nels A. Holtman, Smolan, Kansas. Combined with a revoluble platform having radial arms with tension or lock latches, and a belt or cable, are equalizing links to which draught attachments are pivoted, with other novel features, and whereby the team may be attached within the circle of the driving belt and near the outer end of the lever arm of the apparatus.

**TELEGRAPHY.**—Shirley M. English, New Orleans, La. This is an invention designed to overcome the defects of "light sending," and to insure a good connection at the contact points of the instrument, there being combined with a vertically swinging lever and a second lever actuated therefrom and connected with the main line, two pivoted arms connected with opposite poles of a battery, a spring insuring contact of the second lever with the arms.

**VEHICLE SEAT LOCK.**—Henry A. Lombard, Saco, Me., and John R. Rankin, Wells, Me. This is a device enabling the operator to conveniently place the seat in position without going between the wheels, and whereby the seat may be tilted without being disconnected, for convenience in loading the vehicle and to keep the seat dry when not in use.

**GLAZED STRUCTURE.**—William H. Coulson, Jersey City, N. J. This invention relates to a structural improvement whereby the glass or similar substances may be laid in a metallic frame without the use of putty, provision being made for the disposal of rain and condensed vapor, and the invention covering various novel features and combinations of parts, to accomplish desirable results in a simple and practical manner.

**SASH HOLDER.**—John Schofield, Holyoke, Mass. This is a sash support having a bracket frame and a curved plate spring coiled at each end into volute scrolls that are attached to the bracket frame, being designed for ready application to new or old sash, and to hold either the upper or lower sash at desired points of adjustment.

**MOSQUITO CANOPY.**—Augustus Miller, Hoboken, N. J. This is a device by which the netting to be spread over the bed may be rolled up when not in use, and in which the netting is so attached to the roller that when it is drawn out therefrom one section may be folded down at each side of the bed and a third section at the foot.

**SYRINGE ATTACHMENT.**—Alfred E. Charlesworth, Seattle, Washington. This invention is designed to provide a simple and convenient attachment, with a peculiar construction of the various parts and their novel combination.

SCIENTIFIC AMERICAN BUILDING EDITION. JUNE NUMBER.—(No. 56.)

TABLE OF CONTENTS.

1. Plate in colors of an elegant residence at Montclair, N. J. Munn & Co., architects, New York. Perspective view, also a plate showing the north and rear sides, floor plans, sheet of details, etc.
2. Elegant colored photographic plate, with floor plans, sheet of details, etc., of a cottage at Blythebourne, L. I. Estimated cost \$3,200.
3. Residence at Yonkers, N. Y. Perspective view and floor plans. D. & J. Jardine, architects, New York. Cost, \$10,950.
4. A residence at Orange, N. J. Perspective views, floor plans, etc. Cost about \$12,000.
5. Perspective view and floor plans of a residence at Holyoke, Mass. L. B. White, Holyoke, Mass., architect. Cost complete, \$6,000.
6. Sketch of two old Bristol houses.
7. Sketch of hotel and Post Office, Dartmouth.
8. A Casino erected at Springfield, Mass. Cost complete \$12,000. Floor plan and perspective.
9. A church recently erected at Greenwich, Conn., at a cost of \$13,000 complete. J. C. Cady, architect, New York. Ground plan and perspective elevation.
10. View of the entrance to the United States Trust Company's building, Wall Street, New York.
11. A dwelling at Yonkers, N. Y. Cost complete \$5,000. Floor plans and perspective elevation.
12. Elegant residence at Stamford, Conn. W. R. Briggs, architect, Stamford, Conn. Cost \$15,000. Floor plans and perspective.
13. View of the iron and wood gate in front of the entrance to the Press Pavilion at the recent Paris exposition.
14. Miscellaneous Contents: Fireproofing wooden floors.—"Peach bottom" slate.—The manufacture of granite.—The lien law.—Combustible architecture.—Variety in Gothic architecture.—New No. 9 double cylinder planer and smoother, illustrated.—A sliding Venetian blind, illustrated.—The Holmes spur feed slitting machine, illustrated.—Get sound titles to your real estate.—Heating apparatus for a wagon factory.

The Scientific American Architects and Builders Edition is issued monthly. \$2.50 a year. Single copies, 25 cents. Forty large quarto pages, equal to about two hundred ordinary book pages; forming, practically, a large and splendid MAGAZINE OF ARCHITECTURE, richly adorned with elegant plates in colors and with fine engravings illustrating the most interesting examples of Modern Architectural Construction and allied subjects.

The Fullness, Richness, Cheapness, and Convenience of this work have won for it the LARGEST CIRCULATION of any Architectural publication in the world. Sold by all newsdealers.

MUNN & CO., PUBLISHERS, 361 Broadway, New York.

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

For Sale—New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N. Y.

For Sale at Low Figures—Foundry and general repair shops, located in a beautiful, healthy village, having good railroad facilities. Reasons for selling, sudden death of former proprietor. For full particulars address Helen I. Woodsworth, administratrix, Nunda, N. Y.

Turk water motors at 12 Cortlandt St., New York.

Fruit Evaporators. Trescott Mfg. Co., Fairport, N. Y. For best hoisting engine. J. S. Mundy, Newark, N. J. Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Friction Clutch Pulleys. The D. Frisbie Co., N. Y. city.

Belting.—A good lot of second hand belting for sale cheap. Samuel Roberts, 369 Pearl St., New York.

Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 155 machines in satisfactory use.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Best drying machines for grain, sand, clay, fertilizers, wet feed, etc. Made by S. E. Worrell, Hannibal, Mo.

"How to Keep Boilers Clean." Send your address for free 96 p. book. Jas. C. Hotchkiss, 120 Liberty St., N. Y.

Gun and Machine Makers' Screwdrivers, drop forged in best Tool Steel. Billings & Spencer Co., Hartford, Ct. Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Lait and Canal Sts., New York.

We wish to purchase a Y. H. P. gas engine in first-class order. Address with particulars, Wm. E. Gill, Sec'y, Grand Rapids, Mich.

Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting Works, Drinker St., Philadelphia, Pa.

Guild & Garrison, Brooklyn, N. Y., manufacture steam pumps, vacuum pumps, vacuum apparatus, air pumps, acid blowers, filter press pumps, etc.

For low prices on Iron Pipe, Valves, Gates, Fittings, Iron and Brass Castings, and Plumbers' Supplies, write A. & W. S. Carr Co., 138 and 140 Centre St., New York.

For the original Bogardus Universal Eccentric Mill, Foot and Power Presses, Drills, Shears, etc., address J. S. & G. F. Simpson, 26 to 36 Rodney St., Brooklyn, N. Y.

The Holly Manufacturing Co., of Lockport, N. Y., will send their pamphlet, describing water works machinery, and containing reports of tests, on application.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N. Y.

For Sale—Ornamental chimney top patent. Prevents the rain from washing the mortar from between the bricks. Address for further particulars, F. Maurer, 208 Lincoln Ave., Peoria, Ill.

The whole letters patent on the oil can illustrated on page 389 will be for sale, at a reasonable price, for the next sixty days. If not sold then, will want a reliable manufacturer to make in large lots, for cash. Address patentee.

Send for new and complete catalogue of Scientific and other Books for sale by Munn & Co., 361 Broadway, New York. Free on application.

Notes & Queries

HINTS TO CORRESPONDENTS.

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. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. 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.

(2272) G. B. asks (1) if there is a difference between mineral wool and asbestos. If so, what is it? A. Mineral wool is made artificially by blowing melted slag or glass into threads by steam. Asbestos is a natural mineral. 2. What is the liquid used by the so called "fire eaters," that they use on their hands before handling red hot iron, etc.? A. Dilute sulphuric acid or very strong solution of alum. Your other query will be answered later.

(2273) C. H. asks (1) if benzoic acid can be deodorized. A. No. 2. How can it be reduced? A. It is soluble in alcohol.

(2274) A. B. S. asks: 1. Is there any process by which the strong odor in the spirits of turpentine can be taken away, and if so, would the strength of the turpentine be reduced? A. Redistill from a solution of caustic potash; it will not impair its quality. 2. If equal parts of white wine vinegar and alcohol be put together in a bottle, would the alcohol turn to vinegar, and if so, how soon? A. Yes, if air is admitted; the time cannot be stated. 3. Is there any difference between the oil and spirits of turpentine? A. No; they are synonyms.

(2275) V. H. asks: Can cement be softened or loosened from the joints of terra cotta sewer pipe, without breaking the pipe? If so, how? A. No. 2. What is the average width across the shoulders of a man? A. It depends on the race. 3. What is the average length of a man's arms? A. About 6 feet from hand to hand when extended. This also depends on the race. 4. Can a person that is deaf in one ear hear a phonograph? And if so, how would you arrange it? A. Yes;

no special arrangement is needed. 5. How can candle grease spots be taken out of soft woolly cloth? A. Scrape off all that will come. Then place a piece of blotting paper over them and iron with a hot iron. 6. Do you recommend a trade school to learn a trade in, or the ordinary way of apprenticing, for the time it takes to learn it? A. The trade school.

(2276) C. S. W. asks: 1. Is aluminum a good conductor of electricity? A. Yes; about half as good as copper. 2. Does a dynamo when running generate new electricity, or does it bring under control and use that which is already in the atmosphere? A. It converts mechanical energy into electrical energy. As we do not know what electricity is, we cannot speak of it in the sense of an entity as you do. We cannot consider it as being a substance "pr sent in the atmosphere."

(2277) L. B. L. asks (1) where a given day begins, that is, where on the earth's surface was it first May 10, 1880? A. At 180° longitude east from Greenwich. This is the best that can be said on the subject, as it is not to be regarded as an absolutely fixed thing. 2. Does the dynamo create electricity? A. The dynamo converts mechanical energy into electric energy. Until it is settled what electricity is, we cannot consider the question of its creation. Your other suggestions are not valid.

(2278) W. F. C. asks: 1. B says that gunpowder will not burn in a vacuum. C says that it will. Which is right? A. C is right. 2. If a balloon rises to the height of eleven miles with 1,000 pounds ballast, and the ballast is then thrown out, will the balloon rise any higher? A. Yes.

(2279) J. C. O. asks (1) for a non-odoriferous disinfectant; is there any cheaper or better than common copperas dissolved in hot water? A. The advantage of copperas is that it is not highly poisonous; the disadvantage is that it stains tissues, and under some conditions even porcelain. It is very efficacious. Sulphate of zinc probably surpasses it, but is poisonous. 2. What are the ingredients used in the solution for dipping old brass fixtures or ornamental brass work or chandeliers, etc., to make them look clean? A. Wash with beer. Dipping acid is not applicable except where they are to be relacquered, etc.

(2280) W. P. B. asks: Can you give me a solution for platinum plating (with battery) a pair of crucible tongs of German silver? A. No really satisfactory solution for the deposition of platinum by battery as a solid coating has yet been devised. One formula directs the addition to a solution of sodiochloride of platinum of a little oxalic acid. Then enough caustic soda is added to make it alkaline. Platinum plates may be riveted to the inner faces of the jaws of the tongs, and will make a better job.

(2281) T. M. C. A. asks (1) if a balloon will ascend when filled with compressed air. A. No. 2. Should it be filled with gas? A. It should be filled with gas.

(2282) L. W. T. asks for the construction of a lightning arrester for telegraph. A. In the SCIENTIFIC AMERICAN SUPPLEMENT, No. 752, you will find an account of Mr. Oliver Lodge's lightning protectors. Ordinarily a metallic comb or plate with edge filed into saw teeth is connected to line wire outside of instruments, and similar plate with its teeth facing and close to those of the first is connected to a "ground," which latter must be very good.

(2283) C. E. L. writes: I have a very fine "scopticon," but I find it inferior for exhibitions, on account of oil light not being bright enough. Please say if there is any other fluid that can be used safely in same burner that will give better results, or can I improve on the old light by adding something? A. The oxyhydrogen or lime light is, probably, all things considered, the best for ordinary use. The electric light is superior, but is not always applicable. Portable oxygen generators are now sold by dealers in magic lantern supplies. There is no "fluid" such as you ask for. A little camphor may be dissolved in the oil.

(2284) J. M. M. writes: I want a few good formulas to make colognes. Could you furnish me them? A. As a rule there is considerable difficulty in procuring a good cologne. The alcohol should be deodorized, and probably it is best after addition of the citron oils to distill, and then to add to the distillate the other oils. The following is a typical formula:

- Oil of bergamot..... 4 fluid ounces.
- " lemon..... 1 1/2 "
- " neroli bigarade..... 3 "
- " rosemary..... 3 "
- " cloves..... 3 "
- " rosemary (best)..... 1/2 "
- Deodorized alcohol..... 2 1/2 gallons.
- Rectified spirit..... 1 1/2 "

Other formulas are given in Cristiani's "Perfumery and Kindred Arts," which we can supply by mail for \$5.

(2285) J. S. N. asks (1) how to make a table relish such as is sold in bottles by grocers. A. The following is given as the formula for Worcester-shire sauce: Mix together 1 1/2 gallons white wine vinegar, 1 gallon walnut catsup, 1 gallon mushroom catsup, 1/2 gallon Madeira wine, 1/2 gallon Canton soy, 2 1/2 pounds moist sugar, 19 ounces salt, 3 ounces powdered capsicum, 1/4 ounces each of pimento and coriander, 1 1/2 ounces chutney, 1/4 ounce each of cloves, mace, and cinnamon, and 6 1/2 drachms asafoetida dissolved in 1 pint brandy 20 above proof. Boil 2 pounds hog's liver for 12 hours in 1 gallon of water, adding water as required to keep up the quantity, then mix the boiled liver thoroughly with the water, strain it through a coarse sieve. Add this to the sauce. 2. In making flavoring extracts such as peppermint, checkerberry, etc., how much coloring is used for the different extracts, if made by the gallon? A. No coloring whatever should be used. 3. How is ammonia (such as is sold in bottles by grocers, etc.) made—materials, amount of each? A. Sulphate of ammonia is treated with water and lime in a still and heated. The gas evolved is passed through water, which absorbs it. A small amount of a fatty acid or similar compound may be added. 4. Name of a book (if you know of any such)