

## RECENTLY PATENTED INVENTIONS.

## Railroad Appliances.

**TRANSMITTING POWER.**—Timothy W. Lemieux, Duluth, Minn. This invention covers a device for transmitting a reversible motion from a continuous running cable, for use with traction railways, which will effectually operate as a means for reversing the moving direction of the car, and also make a simple and positive gripping device in its connection with the cable and the car.

**CAR BRAKE AND STARTER.**—John B. Swain, Newbern, Ind. Adjacent to a disk rigidly mounted on the car axle is a ring inclosing a coiled spring, one end of which is secured to a projection on one side of the disk, while the other end is secured to the ring, the spring being wound up by the stopping of the car and giving out its energy as the car is started, or to assist the car over up grades, the invention covering numerous novel features facilitating the working of this principle.

**CAR COUPLING.**—Samuel T. Grimmer, West Plains, Mo. This is an improvement in couplings employing a link and pin, and provides means whereby the coupling may be effected without the operator going between the cars, spring arms being secured within the drawhead, and one of the arms having a socket arranged to receive the end of a link.

**CAR DOOR.**—Edward B. Searles, Baltimore, Md. The door is made with peculiarly constructed shoes or bearings, with novel connections with the door, and novel door securing or fastening contrivances, to prevent the entrance of flying sparks or of moisture around the door.

**CAR HEATER.**—John Q. Winfield and Benjamin H. Strickler, Broadway, Va. This invention consists of certain novel parts and details, and combinations thereof, for an improved car heater, designed to furnish pure heated air to the cars, while not liable to set the cars on fire in case of accident.

**RAILROAD TIE.**—Michael Maloney, Ironton, Ohio. It is a metallic tie made cross shape in cross section and having openings in its top flange and offsets on its horizontal flanges, a bolt secured to the top flange having a head projecting on the base of the rail, being very simple and durable, and permitting an easy placing or removal of the rail, which it is designed to hold securely in place.

## Engineering.

**SHAFT BEARING.**—Benjamin A. Dobson, Bolton, Lancaster County, England. A non-rotating metal bushing forms a journal for the shaft, and is fitted with an eccentric sleeve, which is fitted within a second eccentric sleeve supported by the pedestal, with means for operating the eccentrics to adjust the position of the shaft with the bushing as required, being particularly intended for use with carding engines.

**AIR DRAUGHT ENGINE.**—Otto A. Benkenorf, Wilmet, Kansas. This invention covers a novel arrangement of wheels and air guides upon a vertical rotary shaft in an upright air flue, the upward draught of which may be stimulated by heat from below or by a ventilating cowl on the top of the flue.

## Miscellaneous.

**BLOW PIPE.**—Edward B. Powers, Taunton, Mass. The ordinary blow pipe is provided with air and gas cut-off valves, which are operated by pressing upon a spring-supported rod, the head of the latter being in such relation to the stand of the blow pipe that it may be easily reached by the hand of the operator when taking up the blow pipe or laying it down, the invention also covering improvement in the air valve and its connection with the gas valve and operating rod.

**BEVEL GAUGE.**—Milon O. Godding, Monrovia, Cal. It is a hinged plate or guide, with supporting plate adapted for attachment to the utensil with which it is to be used, the guide having curved or segmental guide rods and a graduated segment, with which registers a pointer or index also applied to the supporting plate, with other novel features, for producing any required bevel or a cut of any angle.

**MOULDING MACHINE.**—Martin W. Walker and William Jowitz, Sing Sing, N. Y. A carriage carrying an endless belt supports the moulds and passes them through a sand machine in which sand is filled into the mould, after which the moulds are distributed on the floor of the foundry.

**MAKING MALT.**—Justin Whitney, Boston, Mass. The apparatus employed consists of a vertical hollow shaft to which rotating horizontal pans are attached, in which the grain is at first exposed to a forced current of moist air at low temperature, subsequently to a forced current of moderately heated air, and later on more highly heated air, until the malt is finished.

**STEREOTYPE PLATE.**—Lucius Goss, Upper Montclair, N. J. This is a plate cast with several spaced or separated columns joined at the ends, whereby the longitudinal sawing of the columns is avoided, and whereby the edges of all the columns in the plate may be trimmed at one operation.

**FIGURED FABRIC.**—Thomas Taylor and Jacob Warburton, Bolton, Lancaster County, England. The fabric is made with two shuttles, one carrying a coarse weft for the back and filling of the figure, and the other a fine weft for the face of the ground and figure, two warps being employed, one woven tight and the other slack, to produce figured fabrics with a raised fine figure upon a level ground, for bed quilts, toilets, etc.

**BOAT.**—Albert L. Shears, St. Louis, Mich. The planking is first bent over a form and its ends secured at the stem and stern, transverse bands being passed around the structure from the gunwale and adjusted to draw the longitudinal edges of the planking together, the boat being made without the usual ribs, the keel being detachable, and the seats removable, supported on angular brackets.

**FURNITURE DRAWER.**—George Bower, Fayette, Mo. A roller is journaled on the rear of the drawer, with projecting ends, around which cords are wound having their ends secured to the front and rear of the casing, making a guide device whereby the drawer may be moved in and out of the casing in an easy and effective manner without sticking.

**INHALING TIP.**—Myron S. Green, New York City. This tip, adapted to fit a vertically bored cork inserted in the mouth of a bottle, is so made that when the stem is but partially screwed into the socket, the operator, having the nipple end of the stem inserted in the nostril, may inhale or exhale without removing it, while by screwing down the stem the bottle is effectually sealed.

**WATERPROOF COMPOUND.**—Carl Grunzweig, Ludwigshafen-on-the-Rhine, Germany. It is a granular, non-heat-conducting compound, consisting of ground cork, the granules of which are provided with a thin external coating of resin and asphalt.

**VELOCIPEDE.**—Calvin Jackson, Jacksonwald, Pa. The vehicle allows leveling of the axles and plumbing of the main driving wheel tires on transversely sloping roads, also an arrangement of a main central seat frame allowing it to be shifted laterally to level the seats, the machine being more especially adapted for four riders, and embodying various minor improvements.

**WAGON BRAKE.**—James R. Robinson, Cornelia, Mo. A sliding brake frame is employed, having brake shoes pivotally connected by a rod with a lever pivoted to the side of the wagon adjacent to the driver's seat, the brake being easily adjusted and effective, while simple in construction.

**FIRE ESCAPE.**—Rudolph A. Reiss, Hoboken, N. J., and Edward Pettenkofer, New York City. It consists of a casing with automatically opening doors attached to a building, a frame detachably secured in the casing, with a trough-shaped chute, and ropes extending beyond the chute for detaching the frame from the casing and drawing it down.

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## NEW BOOKS AND PUBLICATIONS.

**THE CONVERSATION METHOD, FRENCH.** By Edmond Gastineau, A. M. Ivison, Blakeman & Co., Publishers.

This work, just published, starts out by giving the pupil idiomatic phrases of an every-day nature and necessity, just as a child hears and takes up one by one the set phrases spoken around him. These idioms and phrases are rehearsed again and again in conversations, although constantly varied and enlarged upon by the introduction of new words. In this way, the pupil's stock of necessary words and phrases constantly increases, and he soon finds himself master of a sufficient portion of the language to express all his ordinary wants. The process is vivified and made interesting in this book by the assumption that the learner has just landed in Paris, where he finds himself surrounded by the circumstances peculiar to the place and country, and thus is made to learn and to use in conversation just such things as he would need to say if he actually were in France. He goes through railroad depots and custom houses, to hotels, where he orders his rooms, meals, etc. to stores, where he calls for goods and discusses their color and quality; to theaters, concerts, museums, to the opera, the Salon, etc., conversing here about the play and players, there about composers, music, and singers, elsewhere about pictures and painters, etc. French literature even is treated in short but interesting fashion. So, the learner is constantly moving in a French atmosphere, while his training ranges all the way from practical and every-day things to broader and more intellectual subjects. Meanwhile, the grammatical phase of language is by no means neglected. But it is studied subordinately to the conversational element, and in such way that by the time the pupil has reached the end of the book, he finds that almost unconsciously he has acquired a systematic knowledge of the language as well as the power of speaking it. A system of figured pronunciation also accompanies the text. This is based on values as found in Webster, and has evidently been worked out with great care and accuracy. It forms a valuable addition to the work, and makes it also admirably adapted to the purposes of self-study. For the idiomatic excellence of its vocabulary, a happy combination of the interesting with the practical, and the thorough treatment of the language, the conversation method as here presented is admirable, and the more it is examined and studied, the more highly it will be appreciated.

**FORTSCHRITTE DER ELEKTROTECHNIK.** Quarterly report of the latest inventions in electricity, including telegraphs and signals. Edited by Dr. Karl Strecker. Second volume. First number for 1888. Berlin: Julius Springer, 1888. Pp. 197.

In this report are compiled the names of inventors and writers on applied electricity, with a short description of the devices and conclusions reached by the various writers and inventors. The patents, periodicals, etc., in which the several inventions and reports can be found are given in full, with date, etc. The first chapter

treats of electro-mechanics, with its various subdivisions; the second of electro-chemistry, with the three subdivisions of primary and secondary batteries and applied electrolysis; the third part relates to telegraphs, telephones, and signals; the fourth to measurements; and the fifth and last to earth currents, atmospherical electricity, lightning rods, etc. The work will undoubtedly prove a very valuable reference book.

"Chemistry as She is Wrote."—A very curious book is the one that has just appeared from the press of Remington & Co. It is entitled "A Correlation Theory of Chemical Action and Affinity," by Thomas Hall Wright, M.D., of Balvia. It bears the same relation to chemistry that the famous book "English as She is Spoke" does to philology. As a sample we present the following paragraph: "The pressure Forces of Gravities, and the shine Forces of the Stars, and of the Sun, and of the Planets—in other words, the graduated pressure Force and the Graduated photothermal Force, namely plus and minus Heat and Light—heaviness and lightness, Light and Heat, Cold and Shade, the sidereal Fires or Shines, and the planetary Fires or Shines—exist throughout the Earth globe, and the Universe, and for All things, and therefore, also and indeed for Chemistry, and most especially for Cosmical Chemistry." There are between three and four hundred pages of such statements.

The Smith & Anthony Stove Co., of Boston, Mass., manufacturers of "Hub" ranges, have issued a beautiful calendar for 1889. It is in six sheets, tied together by a ribbon, each sheet being a fac-simile of a delicate water color drawing of charming sketches of child life, together with attractive landscape scenes.

The Union Metallic Cartridge Co., whose factory is at Bridgeport, Conn., in the 1889 calendar they are sending to their customers give representations of some hunting and frontier scenes, the most prominent figure being that of a young lady armed with a gun and deftly using the company's cartridges in the field of action in loading it.

The Gurney Hot Water Heater Co., of Boston, are likewise sending out a very neat calendar, on which is an admirable representation of their most improved form of heater, used for heating private dwellings or public buildings by hot water circulation.

The American Frost Meter Co., of Boston, has recently issued, in convenient form for reference, a book of meter tables giving number of United States gallons for each cubic foot, from one to 1,000,000, the tables being compiled by George A. Ellis, C.E.

Any of the above books may be purchased through this office. Send for new book catalogue just published.

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## Notes &amp; 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.

(158) I. E. P. asks for a formula for a good disinfectant. A. Sulphate or chloride of zinc dissolved in water is excellent; thymol is considered a good aerial disinfectant.

(159) San Diego and F. W. D. ask: 1. What are the ingredients that enter into the composition of hand grenades for putting out fire? A. Water mixed with different salts. Sulphate of soda and bicarbonate of ammonia are very good ingredients. 2. Are there any chemicals that will render kerosene oil non-inflammable, and what are they? A. No. 3. What is asbestos composed of? A. It is a natural mineral of the family of anhydrous silicates, formed by decomposition of the hornblende or pyroxene type of rock. 4. What preparation is used to make stage clothing and scenery non-inflammable? A. Tungstate of soda is very efficient. Sometimes scenery is painted on wire gauze.

(160) C. E. D. writes: I have a meerschau pipe which has been "burnt" in coloring, the top of the bowl being the natural color, while the lower part and stem are a rich brown. Is there any efficient receipt for bringing the whole pipe back to its natural color, so that it can be recolored again? A. Meerschau pipes are sometimes heated in melted beeswax for ten minutes. It is better to send it to a reliable dealer for treatment.

(161) F. B. C. asks: Could I charge a storage battery of one cell by means of the electricity generated by a 16 in. belt, moving vertically (length about 100 ft.), from which I now, by means of wiring, light 105 gas jets, ordinary tips, one at a time? Spark from 1/4 in. to 1 in. according to condition of weather. Or if not, how could I intensify it (the current)? A. You ask for an impossibility in a practical sense. The current has such high potential and so little quantity that it would not work for the purpose named.

(162) W. H. D. asks (1) for a good recipe, whereby he could clean thoroughly oil paintings, and restore them to their original colors. A. No such receipt can be given. If the paintings are valuable, they should be put in the hands of a professional restorer, who will adapt his methods to the requirements of the case. 2. To what purpose could large quantities of