

Business and Personal.

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If an invention has not been patented in the United States for more than one year, it may still be patented in Canada. Cost for Canadian patent, \$40.

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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 This is for our information, and not for publication.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.

(1) E. E. C. asks if a person weighs any more after eating a hearty meal than before, and is it the same with drinking as with eating? A. Immediately after eating or drinking, a person weighs more than before it.

(2) H. M. W. asks under what pressure gas for illuminating purposes is usually kept in the city mains. Also whether such gas is wastefully soluble in water if the two are in juxtaposition.

(3) J. H. B. says: In a life of the Empress Josephine I have recently read, it is stated that on the 9th of November, 1799, the President of the Directory and guests were surprised by receiving "a telegraphic announcement that Bonaparte had that day landed at Frejus."

(4) W. B. writes: I have some bone black from which I wish to make a porous receptacle for the absorption of gases. I wish to make it as porous as is consistent with durability.

(5) X. Y. Z. asks: 1. Where can I find a good account of the isolation of fluorine, recently hinted at in Nature? A. See the Chemical News, current volume, pp. 36 and 51.

(6) C. E. McC. asks what size of cotton-covered copper wire he must use on magnet in short circuit to get greatest drawing power, with one or two cells gravity battery.

(7) G. F. E. asks how to prepare a solution for copper electro-plating, also if one "crowfoot" battery has power enough for experimental work.

(8) T. N. C. desires (1) a receipt for a varnish for brass. A. An excellent brass lacquer consists of 8 ounces shellac, 2 ounces sandarac, 2 ounces annatto, 1/4 ounce dragon's blood resin, 1 gallon spirits of wine.

(9) B. A. H. asks (1) directions for making wax moulds for moulding plaster centers for ceilings. A. Plaster centers are moulded in plaster moulds, oiled with linseed oil.

(10) A. S.—We know of no iron cement made as you describe. A strong, apparently welding cement may be made as follows: Take equal parts of flour sulphur and dry white lead with one-sixth part of borax.

(11) W. P. J. asks why a loose pulley of certain size, or a wheel such as is used on a band saw machine, shakes when running a certain speed, whereas if the speed is decreased or increased the vibration ceases.

(12) J. C. V. asks: 1. How can I restore the polish on opals blurred and scratched by wear? A. By rubbing with oxide of tin or putty powder on a piece of chamois skin, wet; finish with refined chalk.

(13) H. E. T. asks if there is anything that can be practically used as a substitute for eggs in plum puddings, etc., and where it can be obtained, or how made.

(14) H. B. B.—Either a solution of cupric oxide, i. e., black oxide of copper, dissolved in aqua ammonia, or an ammoniacal solution of basic cupric sulphate, possesses the property of dissolving cellulose.

(15) C. M. K. writes: I have a piece of furniture on which is what appears to be a very fine piece of inlaid work, but on close examination I find that the inlaid work is first sawed out and then put into some kind of black wax, and all polished, which presents a very fine appearance.

(16) W. D. G. asks if there is any practical way of making chain with the links solid, or without welds or soldered joints.

(17) C. G. writes: Where a locomotive engine is running at the rate of say 50 miles an hour, is not the valve cut off by link motion, so it does not travel whole length of its stroke?

engine, but to control it by shortening or lengthening the cut-off by the stroke of the valve. You are right.

(18) W. M. S. desires a recipe for a quick drying varnish. A. Use the following: Pulverize 1 ounce sandarac, 1/2 ounce mastic, 1/4 ounce elemi, dissolving them in 1/2 ounce Venice turpentine, and adding to it a solution of 4 ounces shellac and 3 ounces oil of lavender in 12 ounces alcohol.

(19) B. G. asks: How long will it take for a tap on the telegraph wire to go around the world? A. On a good land telegraph line of length equal to the circumference of the earth, about one second would be needed.

(20) J. H. M. asks: Will you please inform me what combination of metals, spirits, or chemicals is the most and quickest, or most sensitive to heat and cold as to expansion or contraction, that would act on the principal of the thermometer? A. The question is too indefinite for answer.

(21) W. L. asks: In reference to the dynamo described in SUPPLEMENT, No. 161, what difference will there be in the current, if the space between the armature and field magnets is one-sixteenth inch or a little over? A. A clearance of one-sixteenth inch is not too much for efficient working.

(22) W. H. N. asks: What is the difference between the composition of the wind and the atmosphere? A. There is no difference in the composition; wind is atmosphere in motion.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted, December 21, 1886,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions and their patent numbers, including items like Adding machine, Air and other gases, Amalgamator, Animal trap, Annunciator, Axle coupling, Bag, Bag catch, Bait, Bar, Barrel bodies, Barrel machine, Barrel, sheet metal, Basket, Basket, folding sponge, Bearing, anti-friction, Bearing for shafts, Bed heater, Bedstead, Belt gearing, Belt tightener, Bicycle, Bicycle, Beat lowering apparatus, Boiler, Boiler cleaner, Boiler furnace, Boiler water cleaner, Boilers, purifying water for steam, Bone, horn, etc., device for cutting, carving, and turning, Boot or shoe, Boot or shoe insole, Boots and shoes, nail setting machine, Box, Box making machine, Bracelet, Brake, Brake shoe, Bridge, street, Brooder, Broom corn table, Brush, hair or other, Brush, reservoir blacking, Buckle, Buildings, instrument for plumbing the corners of, Bung, Bustle, Button fastener, Button, sleeve, Buttons, manufacture of, Can nozzle, Car brake and wheel dresser, Car coupling, Car coupling, D. L. Ervin, Car coupling, H. Haddon, Car coupling, H. Jones, Car coupling, E. K. Opheim, Car heater, Car seat and berth, Car, stock, R. E. Ismond, Cars, pilot and guard for railway, Carburetor, Card

Table listing various scientific and mechanical items with their corresponding page numbers. Includes sections for Advertisements, SEBASTIAN, MAY & CO'S LATHES, ARGENTIC-BROMIDE EMULSIONS, MARY'S ELECTRIC LAMP, 24 HAND MACHINERY, STEAM CARRIAGES, THE SEVERN TUNNEL, AUTOCOPYIST, DRAINAGE OF PLANTATIONS, THE HYDRAULIC COLLISION BUFFER, and various design and trade mark listings.

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