

rapid in application, needs no special skill for its use, and which shall act on the stamp in such a manner that it cannot possibly be used again.

Will it require more power to drive a Sturtevant blower with its mouth closed than when open? A. Quite the contrary.

(31) S. L. B. asks: What chemical or compound can I use to remove entirely the paper clippings from the pages of an account book, without injuring the paper underneath or defacing the writing thereon? The pasting has been done with mucilage. A. Water is the only remedy; use warm water applied with a clean soft sponge. The sponge should not be too wet, and the scraps should not be removed until the gum is thoroughly softened. With care the scraps may be removed and the greater part of the adhering gum sponged from the pages without injuring the legibility of the writing. A good bookbinder could perhaps perform the work more skillfully.

(32) A. A. F. asks whether glue, starch, or other sticky substance can be made to evaporate, and rise as steam, and act on an article the same as if it had been dipped in the liquid? A. No.

(33) F. P. M. asks: Do you know of anything that will make the beard grow? I would like to grow a beard so as to cover eruptions which have disfigured my face for seven years. A. The expressed juice of raw onions, applied frequently to the parts requiring it, is said to have notable power in restoring the tone of the skin and stimulating the capillary vessels. Considerable efficacy in this respect is also attributed to the oil of myrtle berries, vinegar of cantharides, and petroleum. The repute of these "invigorators" is, however, much greater than their efficacy. Wilson's "invigorator" consists of cologne water, 2 ozs.; tincture of cantharides, 2 drachms; perfumed with a few drops of oil of lavender and rosemary. According to the directions it is to be applied twice a day. If the skin becomes sore it must be discontinued, or used at longer intervals. Weakness of the capillary vessels is usually due to constitutional disorders, and these must first be corrected through the blood. The proper remedies can best be prescribed by a good physician made acquainted with the nature and causes of the affection. A continuance of temperate living, with wholesome food, plenty of exercise, and due regard for sanitary laws, is generally the most reliable invigorator of all the bodily functions.

(34) J. S. B. says: From ill health a great part of my hair and beard has fallen off. Can you suggest any good preparation for restoring or invigorating the hair? A. See answer to F. P. M.

(35) Anxiety asks (1) how the bronze powder for gilding is made? A. Melt together in a crucible over a clear fire equal parts of sulphur and white oxide of tin; keep them stirred with the stem of a glass rod till they assume the appearance of a flaky yellow powder. 2. What is the best way to apply it to glass, so that it will stick? A. Use gold size. 3. How can I prevent the blackening or discoloration of the powder? A. Cover with a coat of clear varnish.

(36) H. W. says: Will you please tell me briefly the best general plan for the construction of a cemetery tomb, more particularly adapted to the purposes of a receiving tomb? A. Make it of stones laid in hydraulic cement, with a floor either of cement or stone, and arching the roof. The door may be of iron. Parties building a dam say that wood kept saturated with water will not decay. Others contend that it must be submerged in order to prevent it. Which is right? A. Both parties may be correct, in a measure, since it is uncertain whether the timber will be continually saturated unless it is submerged.

(37) F. F. W. asks: How can I tell the weight of a cast iron ball of any size without weighing it? A. Multiply the volume by the specific gravity, which for cast iron is 7.207.

(38) H. C. asks for a simple recipe to cure small skin (say squirrel) skins with the fur on, so as to prevent the fur coming out? A. After having cut off the useless parts, soak the skin, remove the fatty matter, and soak in warm water for 1 hour. Mix to a thin paste 1/2 oz. each of borax, saltpeter, and sulphate of soda. Apply this to the skin and let the latter stand for 24 hours. Wash clean, then apply a mixture of 1 oz. sal soda, 1/2 oz. borax, 2 ozs. hard white soap melted together without being allowed to boil. Put away again for 24 hours in a warm place. After this dissolve 4 ozs. alum, 8 ozs. salt, and 2 ozs. saleratus in sufficient hot rain water to saturate the skin; then wring out and hang it up to dry. When dry repeat the soaking and drying 2 or 3 times until the skin is sufficiently soft. Lastly smooth the inside with fine sandpaper and pumicestone.

(39) J. H. L. informs C. H. C. that he can remove the unpleasant taste of cement from his cistern water by simply coating the entire interior of his cistern with common tallow. The tallow will prevent the water coming in contact with the cement, while at the same time it will not impart any flavor to the water.

(40) J. T. T. says that A. B. M. can drill his watch crystal by grinding a rat tail file, three square, and making the point a long thin taper, and use spirits of turpentine; he must be gentle with it when the point just pricks through. After a hole is made, however small, it may be easily rimmed out to any size.

(41) M. H. says: I am manufacturing artificial stone and find it takes water freely. Will you give me some recipe for a wash that will make them waterproof without discoloring the stone, also that will not damage the formation? A. Apply soluble glass.

(42) W. A. D. asks: What angle (if any) should the under side of the teeth of an upright mill saw make with a horizontal line, that is, with the horizontal surface the teeth are cutting? A. It depends upon the hardness or softness of the wood.

(43) F. B. S. W. asks for a recipe for making plug tobacco? A. Strip the tobacco, sprinkle the leaves with a liquor of white sugar, black licorice, and water; make into rolls, and while moist press flat in moulds.

(44) J. H. F. asks: How can I repair small holes in rubber boots? A. By rubber cement composed of India rubber dissolved in benzole, or by attaching thin pieces of gutta percha rendered plastic by immersion in boiling water.

How can I prevent brown linen from shrinking? A. We know of no process.

How can I exterminate those microscopic pests, emetids, which infest many houses during warm weather? A. Sprigs of wormwood or wintergreen strewed around the house are said to be efficacious.

(45) S. B. G. asks: Why are the upper regions of the air colder than the lower? A. Because the heat radiated from the earth warms the atmosphere nearest the earth's surface.

(46) C. A. R. asks: How is a dispatch received from the Atlantic cable? A. Either by reflecting galvanometer or siphon recorder. In the first a delicate magnet carries a small mirror from which a beam of light is reflected, and caused by its motion to make signals indicating letters. Thompson's siphon recorder has been used on the French Atlantic cable. The current from the cable passes into a coil of wire suspended between the poles of magnets. The coil turns round in a direction depending upon the direction of the current. The motion of the coil is communicated to a glass siphon which feeds itself with ink from a basin. The ink is electrified and spurts out against a strip of paper and draws an undulating curve, which indicates the letters of the message.

(47) I. H. asks: 1. How is a staff fastened so as to turn a pivot on it in a common Swiss bow lathe? A. One end is put on the live center of the lathe, the other is held in a steady rest. 2. What are the uses of the centers, and does there not come a chuck with the same? A. The centers are to hold ordinary work. A chuck is necessary to drive the work and usually comes with the lathe.

(48) R. K. says: In overhauling locomotives of different kinds, I find trouble sometimes in telling iron from steel in case-hardened work, such as links, pins, etc. Can you tell me how to tell the one from the other? A. You will find in case-hardened iron small black marks or streaks that do not exist in steel.

(49) O. A. says: 1. I am making castings that weigh about 6 lbs., and they have to be finished all over. I cannot get the cope sound. A. Prick the mould all over with a fine wire, which will let off the air and gas more freely. Make heavier and taller gates, and if necessary dry the mould. 2. Does the quality of pig and scrap iron make any difference, providing it makes soft castings? A. No.

(50) M. A. B. says: 1. I wish to make a flywheel for a lathe by taking a light iron wheel and casting on a heavy rim of cement. What kind of a composition would you recommend? A. Use lead. 2. Could I use a mould made of wood well painted on inside? A. Yes.

(51) C. L. A. asks: What is meant by carbon points used for electric light? What are they composed of? A. They are long rods, cylindrical or square usually about 3/8 of an inch thick, made of carbon obtained from incrustations formed on the hottest parts of the interior surfaces of gas retorts, or from the dust of coke mixed with gas tar, forced into moulds and carbonized in a muffle. The former material is the best, as it burns with great difficulty and is very compact and hard.

(52) J. Valiant asks: How can I prevent blackness when plating gold chains with a solution of chloride gold and hyposulphite soda? A. The blackening is due to the presence of sulphides in solution. The only remedy is to give the work a slight covering of copper (electro deposit) or to use a different bath. The double cyanide gives the best results.

(53) J. H. asks: How is it that gas after it becomes inflamed in safety or Davy lamps cannot escape to inflame the gas outside of the lamp? And also why does the lamp burst after the wire is red hot, or what causes the expansion? A. It is because the metal conducts away the heat so rapidly that the temperature of the gas in contact with it is reduced below the point of ignition. If the gauze becomes sufficiently heated the flame will pass. Depress a piece of fine wire gauze over a clean flame and the same phenomenon will be noticed.

(54) E. S. asks: How is the crystalline surface produced on tin plate? A. Make a mixture of 3 parts hydrochloric acid and 1 part of nitric acid, and dilute with an equal volume of water. It is merely necessary to immerse the plates in this bath for a period not exceeding ten seconds, the plate afterwards to be thoroughly washed with water and dried in sawdust.

(55) A. S. M. asks: Can you give me a recipe for making imitation shellac varnish? A. The following article under this name is used by furniture dealers: Gum sandarac, 1 1/2 lbs.; pale rosin, 1 1/2 lbs.; benzine, 2 gallons. Dissolve by gentle heat. The varnish is quick drying.

(56) R. P. M. asks: What is the solution for bichromate battery known as Allen's crystal, and how can I prepare it? A. We do not know of a solution by this name. The usual fluids for this battery are, for the porous cup, a strong solution of bichromate of potash mixed with about 1/2 part of strong sulphuric acid; for the outer solution, water acidulated with 1/2 part oil of vitriol or 15 per cent of zinc sulphate.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

J. W. H.—No. 1 is traprock and felspar. No. 2 is a semi-composed gneissoid rock with hornblende. No. 3 is hornblende. No. 4 is hornblende schist. Nos. 6 and 8 are limestone and serpentine. No. 10 is felspar and willemite. No. 12 is serpentine. No. 13 is sandstone and chlorite. No. 14 is impure hematite. No. 15 is albite—lime orthoclase. The missing numbers were not in the box.—J. J. P.—It is flint containing small specks of iron pyrites—of no value.—E. P.—The sample of lime appears to be of good quality. It will an-

swer for the light, but must be kept away from the air. A preserve jar will answer.—J. J. E.—It is nodular iron pyrites—sulphide of iron. You will find an article on the subject on p. 7, vol. 36.—J. G. P.—No. 1 is a trap rock containing calcite—lime carbonate, gypsum—lime sulphate, and ferruginous earths. No. 2 contains hornblende, lime carbonate, iron oxide, and pyrites—iron sulphide. No. 3 is an impure talcose schist.

COMMUNICATIONS RECEIVED.

The Editor of the SCIENTIFIC AMERICAN acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

- On the Effect of Wind on Unfinished Buildings. By W. W.
On a Curiously Marked Stone. By H. L. C.
On the Composition of Patent Medicines. By V. N. M. D.
On the Relative Cost of Coal and Coaldust Fuels. By W. F. S.

HINTS TO CORRESPONDENTS.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them. The address of the writer should always be given.

Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published here. All such questions, when initials only are given, are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleasure in answering briefly by mail, if the writer's address is given.

Hundreds of inquiries analogous to the following are sent: "Who makes small tubular boilers for steam launches? Where can I purchase aluminum?" All such personal inquiries are printed, as will be observed, in the column of "Business and Personal," which is specially set apart for that purpose, subject to the charge mentioned at the head of that column. Almost any desired information can in this way be expeditiously obtained.

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending October 9 1877, AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A complete copy of any patent in the annexed list including both the specifications and drawings, will be furnished from this office for one dollar. In ordering, please state the number and date of the patent desired, and remit to Munn & Co., 37 Park Row, New York city.

Table listing inventions with patent numbers and names of inventors, including Alum, manufacture of, G. P. Rockwell; Ammonia salts, treating gas liquor for, L. S. Fales; Barrel holder and skid, G. W. Brown; Bee hive, J. C. Train; Beer measure gage, Cave & Nicholson; Boat knee, D. True; Boots and shoes, protector for, C. Nobs; Boots and shoes, insoles for, A. M. Daniels; Bottle stopper and fastening, H. B. Anderson; Box wood and coal, A. Stautz; Brake, car, J. H. Lakin; Brake, car, Seavers & Jelfs; Brick kiln, J. H. Kelley; Brick machine, W. E. Gard; Broiler, O. Edwards; Bung, F. W. Robertshaw; Burglar alarm, W. H. Knowles, Jr.; Burglar alarm, F. Krupp; Burglar alarm, W. N. Pateson; Butter package, J. F. Bly; Butter package, G. Kator; Button fastening, J. J. Mervesp; Button, sleeve, A. L. Frankenthal; Can, milk, G. H. Lester; Can, shipping, J. C. Moore; Cane, walking, J. Pool; Car, ballast distributing, A. B. Dockstader; Car coupling, C. W. Stimpson, Jr.; Car, locomotive street, H. C. Bull; Car mover, A. Lebus; Car, railway ferry, P. P. Shelby; Car starter, Crocker & Lytle; Cars, distributing grain in loading, J. Jackson; Cars, drawbar for railway, J. B. Baugh; Carding engines, stopping rolls of, C. H. Chapman; Carriage top, P. Copeland; Caster, furniture, E. Hoffstaetter; Caster, furniture, S. Konz; Chair bottoms, cutting veneers for, O. N. Eaton; Chair, opera, P. W. Nolan; Chair seats, Provenzano & De Gaetano; Churn, W. F. Long; Cigar holder, C. Brinker; Cigar lighter, H. R. Whiteman; Clamp, M. L. Edwards; Comb, semicircular, E. W. Smith; Corset, W. S. & C. F. Hunt; Corset, skirt-supporting, C. A. Griswold (r); Cotton and hay press, B. J. Methvin; Cotton batting folding machine, R. Catlow; Cotton seed, obtaining fiber from, W. Adamson; Countersink, D. F. Barber; Cow fetter, A. R. Gillis; Crayon, O. Swasey; Crucibles, compound for, R. W. Wallace; Cultivator, J. S. Butterfield; Curtain roller and bracket, H. C. Steinhoff; Dish, pressed wooden, G. Gardner; Ditches, forming and lining, J. P. Culver; Douche, G. M. Smyser; Drafting apparatus for dresses, C. H. Griffin; Drawing board, T. Bergner; Drill chuck, C. Elterich; Drills, machine for clearing twist, G. R. Stetson; Drilling machine metal, M. L. Edwards; Eaves trough machine, W. J. Barber.

DESIGNS PATENTED.

- 10,270.—BURIAL CASKETS.—Augustus Clark, Amsterdam, N. Y.
10,271.—WALL POCKET PATTERN.—William Hamilton New York city.
10,272 and 10,273.—OIL CLOTHS.—C. T. Meyer and V. E. Meyer, Bergen, N. J.

[A copy of any of the above patents may be had by remitting one dollar to MUNN & Co., 37 Park Row, New York city.]