Business and Personal.

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Silver Solder and small Tubing. John Holland, Cincinnati, Manufacturer of Gold Pens and Pencil Cases.

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For Boult's Paneling, Moulding, and Dovetailing Machine, and other wood-working machinery, address B.C. Machinery Co., Battle Creek, Mich.

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Wanted—Salesman thoroughly acquainted with Wood and Iron-working Machinery. Address John H. Kerrick, Indianapolis, Ind.

Notes & Queries

(1) J. H. P. asks how to get a good and durable dark blue on a gun barrel with acids, and without heat? A. Apply nitric acid and let it eat into the iron a little; then the latter will be covered with a thin film of oxide. Clean the barrel, oil, and burnish.

(2) W. H. L. S. asks: What is the mechanical effect used on the stage in making one scene disappear gradually, and another appear as gradually in its place? A. One way is to arrange a mirror in rear of the stage, the glass being placed at an angle to the footlights so that it will reflect a person standing near the side of the stage, but concealed from the view of the audience. The person stands in a dark compartment, so that his reflection in the glass is normally quite faint. A strong calcium light is then thrown directly on the person so that a vivid reflection appears in the glass. When the light is gradually diminished the reflection appears to fade, and when gradually strengthened on a second person, near the first, the former comes into prominence. Similar effects are produced by the magic lantern.

(3) R. H. W. asks how to soften a lump of gold that is too hard. It has a little copper and silver in it. A. Anneal by the ordinary methods. The presence of tin will sometimes harden alloys of gold and silver.

(4) N. G. P. ask: Will you please give me a recipe for putting a black polish on white wood? A. Mix up a strong stain of copperas and logwood, to which add powdered nutgall. Stain your wood with this solution, dry, rub down well, oil, then use French polish made tolerably dark with indigo or finely powdered stone blue.

Also give me a recipe for making a cheap but durable mucilage? A. Macerate 5 parts of good glue in 20 parts of water for 24 hours, adding 20 parts of rock candy and 3 parts of gum arabic.

Will cream turn yellow, when used as a secret writing fluid on postils, when exposed to heat? A. Yes.

(5) J. H. P. says: I have just tried an experiment on making vinegar from the wild crab apple. It has from two nights' and one day's standing got quite sour, but too bitter to use. How can I get the bitter taste from it without doing it an injury? A. Warm a sample of the vinegar and agitate it with a little egg albumen. If after settling 2 hours it is not improved, distillation must be resorted to.

(6) L. P. M. asks for (1) a lacquer to gild burnished iron and zinc? A. A good lacquer consists of alcohol, 8 ozs.; gamboge, 1 oz.; shellac, 3 ozs., annatto, 1 oz.; solution of 3 ozs. of seed lac in 1 pint alcohol. When dissolved add ¼ oz. Venice turpentine and ¼ oz. dragon's blood to make it dark. Keep in warm place for 4 or 5 days. 2. Also the best method of removing stains from gold and silver plating? A. Immerse for some time in a solution of ½ oz. cyanide of potassium to 1 pint rain water, and brush off with prepared chalk.

(7) A. A. R. asks the length of time incubation takes for hen's eggs, turkey's, duck's and geese', and the degree of heat during the time from first to last? Also the management the eggs require? A. Geese 30 days, turkeys 27 to 28, ducks 28, hens 21. Temperature 140°. The eggs should be turned every 6 or 7 days, and the chicks, when hatched, kept until strong under an artificial mother made of sheepskin.

(8) R. A. McC. asks for a preparation that will erase lead pencil writing from printed pasteboard cards (colored) that will not injure the printing or color of cards? A. Stale bread or possibly soft "bottle" india rubber.

(9) C. M. C. asks: If the requisite length of a pendulum rod to vibrate seconds is $39\frac{3}{10}$ inch, how can the number of vibrations be found from any given length of rod, or *vice versa*, the length of rod from the number of vibrations? A. The time of oscillation increases in the same ratio as the square root of the length of the pendulum. Thus if the length of a pendulum be increased 4, 9,16, times, the time of its oscillation will be increased only 2, 3, 4, times.

(10) J. C, W. asks: 1. What was the cost of the Suez Canal? A. $80,893,665, or about $808,936 per mile. 2. What was the greatest engineering work of modern times, and what was its cost? A. The Mississippi jetties and the tunnel under the Straits of Dover, both unfinished.

(11) D. U. G. says: I have had several arguments with parties in our town about making rust joints in cast iron, and have been told that it cannot be done. I claim that it can be done; but how I cannot tell If you can give me any information upon the subject it will be thankfully received. A. Rust joints are made by mixing the following ingredients in the given quantities, and driving the mixture with a caulking tool into the joint: Cast iron turnings or borings, 100 lbs.; powdered sal ammoniac, 1 lb.; flowers of sulphur ½ lb. The latter ingredient is sometimes omitted.

(12) W. G. M. says: 1. The *Nautical Almanac* gives the polar distance of Polaris for January 1, 1870, as 1° 23′ 01″. The formula for computing the azimuth of Polaris for the same date and for latitude 42° gives azimuth of Polaris 1° 51′ 45″. Will you please explain why the azimuth is greater than the polar distance? A. Azimuth is the distance between the meridian of any place and a vertical circle starting from the zenith of that place, measured on the horizon—the vertical circle of course cutting the center of the star whose azimuth it is designed to measure. It follows that, as the pole must be in the exact meridian, and an object either east or west of the pole is on a vertical divergent from the meridian of the place, of course it will be further from the meridian at the horizon than at the polar altitude. It must be understood that twice every twenty-four hours the azimuth of Polaris is 0°; this, of course, is when it is upon the meridian, either above or below the true pole. 2. Also why the azimuth increase, and decrease, with the latitude, as the azimuth for the same date for latitude 30° is 1° 36′, but for latitude 50° is 2° 9′ 15″. A. As the zenith approaches the pole, the meridian and vertical circle, passing through an object of a given distance from the pole, will be more divergent, and of course make a wider space on the horizon, where the azimuth is computed.

(13) J. W. asks: What if the best system of artificial ice making? Is not chymogene dangerous to use? A. You will find that the special merits and demerits of the several systems mentioned have received ample comment in these columns. That system is of course the best by which the maximum quantity of goodice is produced at the minimum cost in money and labor. Liquefied gases—as sulphurous acid and ammonia—although incombustible, are not less dangerous than ether or chymogene. Other things being equal, the process supplying the more volatile reagent is usually the most effective.

(14) B. D. N. asks: What will remove coal oil from boards? A. Strong lye.

How can I make rubber cement? A. Fill a bottle $\frac{1}{10}$ full of native indiarubber cut in shreds. Pour in benzole until the bottle is ¾ full. Shake every few days until the mixture becomes as thick as honey. This dries quickly.

What causes the Indian summer? A. No definite theory.

Is gas escaping in a room where a lamp is burning liable to set a house on fire? A. Yes, if a sufficient quantity enters to produce an explosive mixture with the air.

Is there such a chemical as hypophosphite of potassa? A. Yes.

What is dextrin? A. A gum-like product of the action of dilute acid upon starch at 200° to 212°.

(15) J. W. W. asks how to make a black inkin a cold orlump form, so that by adding water I can make ink as wanted? A. A good ink powder, which might with a little mucilaginous material be made into blocks by pressure, consists of Aleppo galls, 3 lbs.; copperas, 1 lb.; gum arabic, ½ lb.; white sugar, ¼ lb.; powder and mix; 2 ozs. of this powder dissolved in 1 pint of boiling water gives a very good ink.

(16) J. R. asks: How can I make a fine quality of ink to stencil boxes, with stencil plates, and also not very expensive? Also the mode and preparation of making and drying it? A. Sulphate of manganese, 2 parts, lampblack, 1 part; sugar, 4 parts; all in fine powder and triturated to a paste with a little water.

(17) E. H. says: 1. If I sink a cylinder weighing 10 lbs. at a depth of 20 feet in water, what pressure on the square inch would I obtain on its piston, the latter being 3 inches in diameter? A. The pressure of the water on the piston, at the commencement of its stroke, would be about $8\frac{7}{10}$ lbs. per square inch, varying a little with the temperature of the water. 2. What weight would bring the cylinder up at the surface of the water after the piston has made its full stroke and bears against the bottom of the cylinder? A. The weight of the submerged cylinder would be 10 lbs. diminished by the weight of the volume of water which it displaces, which volume cannot be calculated from the data given.

(18) E. L. W. asks for a recipe to make the composition to put on matches? A. A good paste for matches contains: 1. Common phosphorus, 4 parts; niter, 16; red lead, 3; strong lead, 6. 2. Ordinary phosphorus, 9 parts; niter, 14; binoxide of manganese, 14; gum or glue, 16. Melt the glue at 212° Fah., gradually add the phosphorus, which must be well stirred into the liquid; then add the niter and coloring matter. Keep the paste at a regular temperature of about 97° Fah. by means of hot water under the iron or marble slab on which it is spread.

(19) I. L. S. says: Can you give me a process for purifying rancid butter, also best coloring ingredients? A. Use 1 pint of water to each lb. of butter, previously adding 20 grains of chloride of lime to each pint of water; wash well the butter in this mixture, afterward rewash in cold water and salt; or melt the butter in a water bath with animal charcoal, coarsely powdered and previously well sifted to free it from dust; skim, remove and strain through flannel, then salt. For coloring, a solution of annatto is commonly used.

(20) J. H. P. asks; 1. What is the meaning of the term "pitch," when applied to propellers or screws? A. The pitch is the distance the screw would advance in one revolution, if it worked in an unyielding medium, after the manner of a screw in a nut. 2. In describing steamship engines, why is it said that the nominal horse power is, say, 500, but will work up to, say, 2,500 horse power? A. The term nominal horse power is merely a commercial unit, and the expression you quote has about the same significance as if it were said that the vessel has a No. 8 engine, which is capable of developing 2,500 indicated horse power.

(21) F. C. S. says: A master mechanic here claims that the proper manner to get the length of an eccentric rod, in case an engine came in with a broken one, is to get the length from center of driving shaft to center of knuckle on link where eccentric rod connects and from this length take the distance from center of eccentric to end of lugs on eccentric straps where the rod is bolted; the remaining length, he claims, equals the length of eccentric rod. Please give the correct way for ascertaining the length under the stated circumstances? A. As you state the rule, it is incorrect. A good way to find the length, is to place the crank on the two centers alternately, and find the length that will divide the lead, or nearly so. This supposes that the eccentric is secured in the proper position. If not, it is first to be adjusted.

(22) Constant reader inquires the amount of upward pressure exerted on the sides of a coffer dam by the surrounding waters, the interior being pumped out to bottom; not taking into account the laying of the timbers composing the dam? A. It is equal to the weight of a volume of water equal to the volume of the submerged part of the coffer dam, or, more simply, the weight of the water displaced,

(23) A. B. C. asks: 1. Why is it claimed for compound engines, that the strains are more regular? It is asserted that the strains are not so irregular as in the simple engine. If the initial pressure in the high press cylinder is expanded into a large cylinder, before the high press piston has completed its stroke, is not the steam expanded, the pressure reduced, and as a consequence the strains as irregular as before? A. If you compare a simple engine with a compound, both working at a high rate of expansion, you will see that the range of expansion in the single cylinder is much greater than in each of the two or three cylinders of the compound engines. The equalization of strains on the crank pin is effected by special arrangement of the cylinders, and this can be done either with compound cylinders or several simple ones. 2. Again, in regard to high pressure boilers, the strength of a cylinder is inversely as its diameter and inversely as its length. Please state where the limit is. I read in the *Engineer* that the tubulous boiler was the only style now known where the pressure could be safely carried at 150 to 160, that is, for sea-going ships. The Mississippi river boats carry 175 to 200 lbs. pressure per square inch; why could not they be used on marine vessels? A. This refers to cylinders exposed to external pressure. In practice the limit of length is a few feet, the internal flues being divided in effect into a series of short cylinders by attaching rings or bands. The tubular boiler is used in marine practice instead of the style with flues commonly found in western steamers, for the reason that it occupies less space and weighs less for the same capacity and economy.

(24) F. M. D. says: I am going to use a composition in my steam boiler to remove incrustation and keep the boiler clean. It is composed of 10 lbs. of soda ash, 1 lb. of muriatic acid, ½ lb. of acetic acid, and 2 lbs. of chestnut oak bark. Will this be injurious to the iron if used regularly, and if so, state which of these articles cause injury? A. Omit everything from the composition except the soda ash.

(25) W. P. says: I am working at an altitude of 10,500 feet, where it is impossible for a pump to draw more than 18 or 20 feet perpendicular, consequently losing 5 lbs. per square inch of pressure on the valves owing to the rarefied condition of the air. Now what I wish to know is this. Does not a steam gauge manufactured in Chicago or Boston, or any other city of the same altitude, mark 5 lbs. light when on a boiler up in this altitude, or say 55 lbs. when there are actually 60 in boiler? By figuring out the safety valve I find such to be the case, or the steam gauge is incorrect. A. The ordinary gauge, when correctly adjusted, shows the pressure in the boiler above the atmosphere. To get the absolute pressure, the pressure of the atmosphere, as obtained from a barometric observation, must be added. We would be glad to have complete dimensions of your safety valve, with weights of the various parts, and the conditions under which the discrepancy between the gauge and valve was noted.

(26) H. C. inquires whether the whole length of the tube, or only that part surrounded by water, is reckoned as heating surface in an ordinary upright boiler? A. In a boiler, all surface that has fire or hot gas on one side and water on the other, is reckoned as water-heating surface. Surface with hot gas on one side and steam on the other is called superheating surface.

(27) A. E. R. asks: 1. Is a hot water boiler test less hurtful to the boiler than a cold water test? If so, why? A. A hot water test is generally less injurious to a boiler than a test with cold water, for the reason that the boiler if tested cold is subjected to strains that do not occur in its practical use. 2. Is there an inspector of boilers in New York State now, and how often does the law require a boiler to be inspected? A. We think not.

(28) C. T. asks: Can an engine run as fast on the level with 100 lbs. steam, as it can with 150 lbs., no load attached to take the steam? A. If the question refers to a locomotive running light, as seems probable, the speed will be greater with the higher pressure if the pipes and ports are sufficiently large.

(29) F. C. S. asks how in drawing an engine with inclined cylinder is the end of the end of the cylinder in top view projected from side view. Four points I can get easy enough, but how can I get more? A. You can find additional points in a similar manner to the first four, by noting where perpendiculars from certain elements or lines parallel to the axis in the side view cut the corresponding elements in the top view.

How many feet a minute can a plunger pump be run to work well? A. The speed of pump is governed by the size of plunger or suction pipe, noting that for ordinary lengths of suction pipe, the velocity of the water should not exceed 600 feet per minute, which figure can be used for a first class pump.

(30) P. B. asks: What does the Post Office department desire for an invention for cancelling postage stamps? A. A canceller is desired which shall be

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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 skins (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 ½ 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, ½ 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, emmets, 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 casehardened work, such as links, pins, etc. Can you tell me how to tell the one from the other? A. You will find in casehardened 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 ⅜ 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 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, 1½ lbs.; pale rosin, 1½ 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 ⅛ part of strong sulphuric acid; for the outer solution, water acidulated with $\frac{1}{10}$ 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-decomposed 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 answer 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.

Alum, manufacture of, G. P. Rockwell	196,043
Ammonia salts, treating gas liquor for, L. S. Fales	195,998
Barrel holder and skid, G. W. Brown	195,916
Bee hive, J. C. Train	196,060
Beer measure gage, Cave & Nicholson	195,980
Boat knee, D. True	195,908
Boots and shoes, protector for, C. Nobs	195,943
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Box wood and coal, A. Stautz	196,052
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Brick machine, W. E. Gard	195,923
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Syringe bottle, hypodermic, E. Pfarre	195,947
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Thill coupling, Spencer & Barrett	195,961
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Vegetable cutter, M. Roos	196,044
Vehicle spring seat, R. Dudley	195,888
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Washing machine, L. Rivers	195,953
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Window cleaner, W. C. Gayton	196,006
Wool, treating artificial, A. D. Elbers	195,889
Yoke, neck, H. H. Hartzell	196,011

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.]

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