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C. G. V. D. B. will find full information as to the manufacture of bicarbonate of soda on p. 125, Science Record for 1875.-T. L. R. will find directions for tempering steel on p. 235, vol. 32.-J. M. L. and J. W. L. will find a full description of the paper process of stereotyping on p. 363, vol. 30. -J. T. H. will find directions for making clay crucibles on p. 330, vol. 32.-H. B. and many others should read Auchincloss on "Valve and Link Motions."-J. H. can transfer pictures to wood by the process described on p. 138, vol. 30. For method of transferring to glass, see p. 123, vol. 30.-A. B. will find an explanation of the floating iron mys tery on p. 133, vol. 31.-J. G. will find a recipe for a hair stimulant on pp. 267, 363, vol. 31.-C. H. can polish walnut by the method described on p. 315, vol. 30.-J. F. A. will find a rule for finding the strength of cylinders on p. 186, vol. 32.-E. C. F.'s queries on water supply through pipes have been answered on p. 48, vol. 29.-H. E. N. will find a description of salicylic acid on p. 324, vol. 32.-W. R. B. can silverglass by the methods described on pp. 177, 203, 267, 331, vol. 31, and p. 234, vol. 30.-I. will find directions for painting boilers on p. 379, vol. 31.-J. H. M. will find directions for a black enamel on iron on p. 208, vol. 26.-J. H. J. will find directions for making a frost-proof pavement on p. 187, vol. 32.-J. M. W. will find a recipe for marking ink on p. 251, vol. 29.-A. B. will find directions for plastering a cistern on p. 203, vol. 32-R. S. B. and many others are once more assured that there is no rule for ascertaining the horse power of a boiler.-H. B. will find full instructions as to lap. lead, and cut-off in our papers on "Practical Mechanism."-S. B. C. can make glass windows opaque by the method given on p. 264, vol. 30,-A. S. S. and G. F. D. must go at once to a physician, or to the clinic of a hospital.-C. D. J. can make white writing ink by following the directions on p. 75, -J. A. H. will find an explanation as to white being a color on p. 379, vol. 31.-S. B. will find a description of the madstone on p. 265, vol.26. Itis a vulgar superstition.-L. M. N. and T. H. G. will find a rule for determining the diameters of pulleys on pp. 26, 73, vol.25.

strips, called furring. This should be done on all outsidewalls, and, if not now done, would most likely be a remedy in this case.

(2) J. B. Jr. says: It is proposed to put up a block of buildings one story high in front, two stories in the middle, and three stories in the rear, with separate chimneys to each section. Will the two story building, being higher, interfere with the draft in the flues of the one story building, and the three story building with that of the flues of the two story building? If so, what is the remedy? A. The probabilities are that the flues will not draw well three quarters of the time. The remedy is to build the third story of the same depth as the second, to draw the flues of the first story extension over to the rearwall of the second story, and carry the chimney shaft up against the said rear wall, topping out above the main roof of the building at the usual hight above said roof.

(3) J. B. S. asks: What steel is used and how is it tempered, for making steel magnets? A. A very hard steel containing a high carbon percentage.

(4) T. C. N. asks: 1. What ingredients are used in the white glazing of cast iron pans? A. For enameling cast and wrought iron vessels, two compositions are in use; one has for its base silicate of lead, and the other boro-silicate of soda. One of these enamels is applied to the scoured surface of the metal in the form of a powder, which is fixed by heating to a sufficiently high temperature to fuse; it then spreads over and covers the metal with a vitreous varnish. The boro-silicate of soda possesses great superiority over the silicate of lead, for it is not attacked by vinegar, marinesalt, or the greater number of acid or saline solutions, even when concentrated; and resists the action of agents used in cooking or chemical operations. The silicate of lead enamel is whiter and more homogeneous, which explains the preference given it by the public, but it gives up oxide of lead to vinegar or to common salt; it acts upon a great number of coloring matters, and it is at tacked by nitric acid, which communicates a dull color to it. On evaporation the liquid leaves a white crystalline residue of nitrate of lead. This enamel is instantly darkened by dissolved sulphides and also by cooking food containing sulphur, such as cabbage, fish, and eggs. 2. Can the same glaze be used on earthen tiles or other ware? A. Yes. 3. Can the glaze be colored green, blue or yellow? A. To color the enamel green, mix with it before heating 1 to 2 parts oxide of chromium to 10 parts enamel. For blue, use prepared cobalt, red lead, niter, each 1 oz. For yellow, use lead and tin ashes, litharge, and antimony, each 1 oz., and niter 4 ozs. Gold and purple of Cassius are used for red and purple. For black, use cal-cined iron and cobalt, each 1 oz., or zaffre 2 ozs., mauganese, 1 oz.

(5) S. C. D. asks: In blowpipe analysis whatdoes the abbreviation B.B. mean? A. Before blowpipe. 2. What is reddle? A. Reddle is also called ruddle and red chalk. It is red ocher containing some clay.

(6) J. M. asks: 1. Will mercury evaporate if its surface is covered with water? A. It will not. 2. Can any one use an electro-coppered plate for the purpose of collecting gold from any composition which may contain it, without infringing on any patent right? A. Yes. 3. Can copper be coated with mercury without first being silver plated? A. Yes: clean the surface with a little sulphuric acid (dilute) and sand, rinse in clean water, dip in the mercury, and rub evenly over the surface with a brush. 4. Will an iron muffle answer in a furnace for the cupelation of silver in any form? A. An ordinary muffle is to be preferred.

(7) O. H. L. asks: How can I make a cylinder for compressing gas for the oxy-hydrogen light? Is there any special joint or seam, or any composition, in use for making the joint tight? A. These cylinders are made of boiler iron riveted together in the same manner as a steam boiler.

(8) S. T. asks: 1. How are magnetic fish made? A. See p. 218, vol. 32. 2. Is the paper of which they are made magnetized? A. No.

What power of microscope is necessary for chemists' use, for examining blood corpuscles, etc.? A. Theoretically, the magnifying power of a lens bears a definite relation to its focal length; but practically this is not precisely the case, since the mechanical difficulties of grinding and fitting the component lenses produce slight variations in the focal distance, and, of course, in the power. A lens whose focal length is actually $1\frac{1}{10}$ of an inch, and its magnifying power, when arranged with an eyepiece as above, is about 45 diameters, may be sold as a one inch objective; or the error, as is more frequently the case, may be on the other side, so that the purchaser obtains, for the price of al inch objective, a lenshaving an actualpower, when combined, of 55 diameters. For the use of chemists, we would recommend a % inch object glass with an angular aperture of about 32°, magnifying, with the various eyepieces, from 75 to 450 diameters. For the use of physicians, a } inch object glass, with angular aperture of 100°, magnifying from 250 to 1,500 diameters, will be found most useful. How can I make a sea green paint? A. The following will give a beautiful blue-green tint: Add to a solution of sulphate of copper a decoction of fustic, previously clarified by a solution of gelatin. To this mixture is then added 10 or 11 per cent of protochloride of tin, and lastly an excess of caustic potash. Wash and dry the precipitate.

(10) A. F. asks: What is the difference between ebonite and vulcanized india rubber? A. Ebonite is made by heating india rubber with half its weight of sulphur.

Is there any method of reducing tortoiseshell to a soft state, so that it could be easily molded? A. No.

(11) M. D. W. asks: 1. Can the same still that is used for distilling oil of peppermint be used for manufacturing sassafras oil? A. Yes, if well cleaned. 2. Is there any difference in the process? A. Very little. The peppermint oil generally requires rectification to render it bright and fine.

(12) J. J. KcK. says: My hair grows very low on my forehead, in fact it reaches my eyebrows and quite covers my temples, injuring my looks very much indeed. As I am a lady, I am vain enough towish it removed, if it can be done without scarring my face. A. The following has been successfully used: Take sulphuret of calcium (fresh) and quick lime equal parts, reduce them separately to fine powder, mix, and keep the mix-ture in a well stopped bottle. When used, a portion is made into a paste with warm water, and immediately applied to the part, previously shaved close, a little starch being generally added in order to render the paste more manageable. It requires caution in its use. It should be applied to only a small surface at a time, and great care should be taken to prevent it from extending to the adjacent parts. The powder loses its properties unless entirely excluded from the air, and no liquid must be added until just before application, and then to no more than is required for immediate use.

(13) G. D. S. asks: Will Babbitt metal impart unhealthy properties to butter, when about 4 inches surface of the metal is in contact with about 4 gallons of cream? A. There would be some risk, especially if any souring took place.

(14) L. L. D. asks: Is it not good reasoning that, when an article is cut through witha saw, it ought to separate? Nevertheless, I have an article that I can honestly saw through ten times on the same line, and then hand it back very nearly as strong as ever. A. We have frequently seen a similar result brought about by the proper use of magnetic force.

(15) A. McG. asks: What is the cheapest method of finding water in a light, loose sandy soil? A. Drive an iron pipe well.

(16) G. S. asks: How can I make laundry blue paper? A. Make a concentrated solution of indigo carmine, in which steep the paper desired to be coated, and evaporate the solution until the paper is coated with a heavy deposit of the coloring matter.

(17) J. G. H. asks: 1. What ingredient in the egg causes the spoon to be stained? A. Sulphur. 2. What chemical change takes place? A. A compound of sulphur in the albumen of the egg attacks the silver, forming a sulphide.

(18) C. D. P. F. asks: How can the steel on an engine be cleaned so as to look bright and burnished? A. Use fine emery paper.

(19) G. L. S. asks: Is there anything that can be used in making cologne that will make the perfume lasting? A. No.

(20) E. E. E. asks: 1. Should green apple wood for handles be cut into pieces the size of a handle, and let it dry before using, or would it be better to saw into boards and cut up when dry? A. The latter is best. Let the boards dry thoroughly before using. 2. How are light colored handles made black and polished to imitate ebony? A. See p. 299, vol. 30. 3. What is the usual way of polishing apple and other hard wood handles? A. See p. ,72 vol. 26.

(21) C. E. C. asks: Is there any way in which the dates on coins can be made clearer? A Carefully clean the coins with dilute nitric acid rinse with water, and polish.

(22) L. H. W.asks: How can I best remove a baked Japan surface from old sewing machines, in order to get a smoother surface for another coat of Japan? A. Use a steel scraper.

(23) G. S. R. asks: What size of cistern will it require to supply a school of about 75 pupils. collecting the rain water by spouting, about 80 feetof spouting being used? A. Make your cistern 6 feet in diameter in the clear on the inside, and about 5 feet deep below the crown. 2. Of what materials and shape should the cistern be? A. Build it of brick with 8 inch walls laid up in Rosendale cement mortar, and with brick bottom and crown. Make it circular. 3. How can I make the best filter? A. Partition off one third the space with a 4 inch brick partition : have small holes for the ingress of water at the bottom of this partition, and fill said one third space with a layer of gravel and clean coarse sand about 6 inches deep. Place on top of this a layer of charcoal about 3 inches thick, and then another layer of sand and gravel like the first. Let the water enter the cistern into the larger space, and be drawn from the smaller.

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American Metaline Co., 61 Warren St., N.Y. City.

Grindstones, 2,000 tuns stock. Mitchell, Phila., Pa.

(1) A. J. R. asks: What is the best plan of preventing dampness striking through a brick wall? A. You do not say whether the plastering is set off from the brick wall by upright wooden

What can I mix with common stable manure to make a good tobacco fertilizer? A. Lime, but ground bone is much better, or some reliable superphosphate of lime.

(9) C. A. K. asks: Is heat visible? A. Heat is a motion of the ultimate parts of a body, and is not visible.

(24) H. A. M. asks: I intend to build an outdoor cellar of brick. Could I make it frost proof by having an eight inch wall outside and a four inch wall inside, with a four inch space between the walls, filled with dust from the bed of a charcoal pit? A. This would make a wall that should retain the warmth of the interior of the cellar; but care should be taken to bind the walls together to prevent their being thrown apart.

(25) J. V. says: I have just built a large fireplace 5 feet wide and 3½ deep, opening about 6 feet high, in the basement of a building 3½ stories high, connecting it with two flues about 8x8, in the room above, about 10 feet from top of fireplace. There is a good draft to both flues, but not enough to prevent the fireplace smoking terribly. How can I remedy it? A. If the flues are together, and it is practicable, you had better remove the dividing partition between them, and make them into one.