

(36) T. L. D. and other correspondents ask what should be the proportion of core to wire in magnets for an electro-motor, and what size wire should be used? A. Core and wire should weigh the same. No. 16 gauge (American) wire is commonly employed.

(37) M. S. asks how to wind wire on the cores of a number of electro-motor magnets? A. Fasten in the toolpost of a lathe a piece of iron having a groove cut in it to receive the wire. Set the change gearing for the screw feed of the lathe to the pitch of thread corresponding to the thickness of the wire. Wind the magnets by running the lathe in one direction and reverse the motion of feed at each traverse.

(38) P. L. F. asks how to deodorize rubber? A. Cover the articles with charcoal dust, place them in an enclosed vessel, and raise the temperature to 94° Fah., and let it remain thus for several hours. Remove and clean the articles, when they will be found free from odor.

(39) J. S. says: I have a quantity of pure rubber 1/4 inch thick, that has been used for thumb cuts for taking the hair from skins, such as beaver, nutria, etc. Can you tell me what I can do with the rubber, as it is all pure? I want to melt it and run into moulds for making the same kind of thumb cuts again. A. Cut the rubber into small pieces and place in the proportion of 100 lbs. in a well closed boiler with 10 lbs. bisulphide of carbon and 4 ozs. absolute alcohol, well stirred; then close the boiler and leave the material to soak for a few hours. It becomes a soft doughy mass, which, after being ground and kneaded, is fit to be formed with any shape, when the solvent will evaporate.

(40) M. T. wants to know the proper weight of a chipping hammer, and how long the handle should be? A. Weight 1 1/4 lbs. for heavy chipping, 1 lb. for light chipping; length of handle 15 inches.

(41) L. G. A. says: My sledge hammer comes off its handle; how can I prevent this? Iron and wood wedges do not answer. A. Make the eye of the hammer smallest in width at the middle, when either a wooden or iron wedge will hold it permanently.

(42) B. F. asks: What is the best material for grinding brass plugs? A. The burnt sand from the middle of a brass casting core.

(43) H. N. M. asks: How can I prevent taps from splitting and hardening? A. Heat the water in which they are quenched to 100°.

(44) H. E. M. asks: What material can I use to braze a brass flange on a copper pipe? A. Commercial brazing spelter mixed with borax and water.

(45) J. R. inquires for a good waterproof varnish for harness? A. India rubber, 1/2 lb.; spirits turpentine, 1 gallon; dissolve to a jelly, then take hot linseed oil equal parts with the mass and incorporate them well over a slow fire.

(46) E. T. C. asks: How can I take old wine and fruit stains out of linen? A. Rub the part on each side with yellow soap. Then lay in a mixture of starch in cold water very thick, and expose the linen to the sun and air till the stain comes out. If not removed in three or four days, rub that off and renew the process. When dry, it may be sprinkled with a little water.

(47) T. B. asks: What will temper steel when the metal will not temper readily when dipped at red heat? A. Add salt to the water.

(48) M. C. asks how to caseharden nuts? A. Finely powder prussiate of potash. Get the nuts red hot, coat them with the powder, put them again in the fire until the powder fuses, and then dip them in water.

(49) E. T. L. asks how he can test to discover whether his planer planes true? A. Take a fine finishing cut on a long casting, turn the casting on its edge and adjust it to touch the point of the tool at each end. Then try the point of the tool in the middle, when any hollowness or roundness will become at once apparent.

(50) A. F. inquires how he can cut out a deep, square, small hole, true? A. By drifting with a square serrated hardened steel plug driven through with a hammer. Lubricate freely.

(51) F. S. asks for a varnish to restore faded rubber goods? A. Use black japan varnish diluted with a little linseed oil.

(52) M. C. H. asks for the best manner of cleaning watch pinions? A. Pith from the stalk of the common mullein is the best material, and is better than cork. It should be obtained from the dry stalk in winter.

(53) B. R. asks what the "liquid foil" is that is used for silvering glass globes? A. Lead, 1 part; tin 1; bismuth, 1. Melt, and just before it sets add mercury 10 parts. Pour this into the globe and turn it rapidly round.

(54) M. C. asks for a recipe for liquid black lead polish? A. Black lead, pulverised, 1 lb.; turpentine, 1 gill; water, 1 gill; sugar, 1 oz.

(55) I. L. asks: Will carbon points do to use in a brace, to mark sheet iron through a temple, to make a mark same as a center punch? A. Yes.

(56) R. J. F. asks if the pendulum can be accelerated one second per day, by putting on an ounce weight? A. Not without virtually shortening the pendulum, that is, by a different distribution of the weight on the bar. For pendulums of the same length, the time of oscillation is independent of the nature or weight of the material—pendulums of metal, glass or wood, all being of the same length, under like conditions will oscillate in the same period of time.

(57) C. H. D. says: I have a machine for running emery wheels, the boxes of which are so worn by continual use as to need re-Babbitting, though the shaft is still smooth and good. Can you give directions for doing this in the most approved way? A. First set the shaft up in its place, close up the ends of the bearing with putty, and pour the lower half of bearing, the Babbitt being at a low red heat, and there being a small piece of rosin placed beneath the shaft to make the Babbitt flow well. Then put a piece of paper on the joint of bottom bearing, put on the cap, stop up the end with putty, and pour the Babbitt through the oil hole. It will aid the flow of the Babbitt to heat the shaft.

(58) J. E. G. asks how to temper gun lock springs? A. Make the springs red hot and cool them off in water, then fry them in lard oil over a fire until they will blaze freely.

(59) C. L. asks if there is any way to remove old grease that has become hard and dry on the bright parts of our engine? A. Scrape off the grease with a triangular scraper. Also for a good recipe for making a cement to fill the holes and seams of millstones? A. Try crushed stone grit 20 parts, litharge 2 parts, quicklime 2 parts. Mix with linseed oil.

(60) M. L. C. asks for a good paint for blackboards? A. Mix together common glue, 4 ozs.; flour of emery, 3 ozs., and just lampblack enough to give an inky color to the preparation. Dissolve the glue in 1 1/2 pints of warm water, put in the lampblack and emery, stir till there are no lumps, and apply to the board with a smoothly rolled woollen rag. Three coats are needed.

(61) F. T. asks how to remove burrs easily from the heads of cold chisels? A. Rest the head upon a block of iron and strike the burrs from the under side, and they will break readily and easily off.

(62) M. H. inquires how he can true up his carpenter's grindstone? A. Use a 1/4 inch bar of iron or a gas pipe for a turning tool, held below the center of the stone.

(63) E. T. P. wants to know how to remove rust from small hollow castings? A. Dip in dilute sulphuric acid, 1 part of commercial acid to 10 water; wash in hot lime water, and dry in the tumbler with dry sawdust.

(64) M. T. says: How can I reduce the elasticity of a bar spring? A. File off a very thin scale from the surface.

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

C. A. S.—The asbestos is of good quality, and will bring a fair price in the market. Asbestos is used for fireproof feltings, varnishes, cements, paints, for engine and boiler packing, and in the manufacture of a fireproof cloth and paper, etc. Dealers will address you.—S. D. H.—It contains large percentages of copper and zinc, and small amounts of iron, antimony, and alumina. The natural occurrence of this alloy (brass) is doubtful. You should send larger specimens and further particulars if possible.—C. P.—Send a sample of the magnesia salt.—O. F. F.—The sulphide contains a little copper, nickel, and arsenic. Silver was not detected. It is not of much value.

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.

WANTS AND BUSINESS INQUIRIES.

Almost any desired information, and that of a business nature especially, can be expeditiously obtained by advertising in the column of "Business and Personal," which is set apart for that purpose subject to the charge mentioned at its head.

We have received this week the following inquiries, particulars, etc., regarding which can probably be elicited from the writers by the insertion of a small advertisement in the column specified, by parties able to supply the wants:

- Who makes electric lights?
Who sells carbon points?
Who manufactures ornamental iron work, such as brackets?

OFFICIAL.

INDEX OF INVENTIONS

FOR WHICH Letters Patent of the United States were Granted in the Week Ending

October 16, 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 such as Agricultural boiler, Air-compressing apparatus, Ammonia soda process, Animals from stalls, releasing, etc.

Table listing inventions such as Blow-pipes, cleaning glass from, R. G. Hemingray, Boiler cleaner, T. O. Kemp, Bolting gage, G. W. Church, Boot and shoe, T. J. Greenwood, etc.

DESIGNS PATENTED.

- 10,274.—HAT AND COAT RACKS.—J. R. Palmenberg, New York, N. Y.
10,275.—CIGAR BOX.—G. Fuchs, New York, N. Y.
10,276.—HANDLE FOR POTTERY OR GLASS WARE.—T. Haviland, New York, N. Y.
10,277.—DESSERT SET.—W. J. Miller, Chicopee, Mass.
10,278.—LINKSTAND BASE.—B. Brower, New York, N. Y.

[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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