

Carvers' and Gilders' Work.

WHITING AND LIMEWASH.—Lime is always apt to turn a bad color. The way to whitewash a ceiling is to first thoroughly wash with clean water, not one pail, which speedily gets dirty, but with several. Then steep balls of whiting in water, and the next day reduce them to a thick cream. Put a kettle on the fire, with sufficient size, and when hot pour it on the whiting, adding, at same time, some fine ground blue-black. The proportions are, say, 6 balls whiting, 2 lb. size, and from $\frac{1}{2}$ to 1 oz. of blue-black, according to taste. I prefer a blue tinge, and sometimes use washing blue for the purpose. The mixture must be allowed to cool before using. To limewash, clean first, and then proceed to make up the following: Take $\frac{1}{2}$ bushel of lime, and slake it; add 1 lb. common salt, $\frac{1}{2}$ lb. of white vitriol, and a gallon of skim milk. With a clean surface this will not shell off, neither will lime-white and size, when properly prepared and laid on a clean surface.

TO PAINT PHOTOGRAPHS.—Oxgall is an excellent means of preparing photographs for water colors. It can be obtained from any artist's colorman, and must be used as sparingly as possible. If the first wash does not seem to answer, rub it gently in with a soft brush. It will catch the paper after a time. If the solution is too strong it may cause blotches in the paper, which would have to be painted over with opaque color. Experiment will teach the strength of the solution.

GILDING LETTERS ON WIRE BLIND.—The letters should be first painted, but an experienced man can do without the paint. However, paint with lead-paint the letters—be sure the outline is clear, as that is where the failure may occur—when dry, paint with gold size, and lay out the leaf. If care be used, failure is out of the question.

TO MAKE PLUM COLORED PAINT.—Mix a quantity of red ochre in an iron pot with melted size: tone to color by adding more or less water to the desired tint; it is then brushed on the legs; when dry rub smooth with glass-paper, and varnish with 2 parts crown hard varnish, and one part French polish.

Miscellaneous.

SINGULAR OCCURRENCE.—The fishing smacks along the coast of Florida report a stream of fresh or poisonous water along the coast, that kills all the fish in its range. They report sailing for 200 miles through dead fish, covering the sea as far as the eye could reach, with all the varieties. Immediately on the shore the water is salt and natural, while less than a mile off it appears of a red brick colour.

A HUMANE DOG.—Two gentlemen who were passing a house in Worcester, Mass., recently, were attracted by a large Newfoundland dog, which kept running toward them and then returning in the direction of a pond in the grove, where something was evidently wrong. They followed the dog to the pond, where they found another dog in the water and unable to get out. His front paws were on the curbstone, but he could not get sufficient hold to draw himself up. He was nearly exhausted, and would probably have been drowned had not the gentlemen assisted him. The dogs showed their gratitude in unmistakable signs.

TO MAKE CORKS AIR-TIGHT AND WATER-TIGHT.—A German chemical journal commends the use of paraffine as the best method of making porous corks gas-tight and water-tight. Allow the corks to remain for about five minutes beneath the surface of melted paraffine in a suitable vessel, the corks being held down either by a perforated lid, wire screen, or similar device. Corks thus prepared, the writer says, can be easily cut and bored, have a perfectly smooth exterior, may be introduced and removed from the neck of a flask with ease, and make a perfect seal.

WHAT MAKES A CAR-LOAD?—This question is thus answered by the *Butter, Cheese and Egg Reporter*: Nominally, an American car-load is 20,000 pounds. It is also 70 barrels of salt, 70 of lime, 90 of flour, 70 of whiskey, 200 sacks of flour, 6 cords of soft wood, 15 or 20 head of cattle, 50 or 60 head of hogs, 80 to 100 head of sheep, 6,000 feet of solid boards, 340 bushels of wheat, 400 of corn, 680 of oats, 400 of barley, 360 of flax-seed, 360 of apples, 430 of Irish potatoes, 300 of sweet potatoes, 1,000 bushels of bran, 130 to 180 barrels of eggs, and 15,000 to 26,000 pounds of butter.

Miscellaneous Mechanical Items.

MECHANICAL WRINKLES: IMPROVED METHOD OF MANAGING STEAM BOILER FIRES.—When the furnace door of a steam-boiler is opened, there should be a simultaneous partial closing of the damper to prevent sudden chilling of the boiler and flues. To accomplish this, with certainty, for every opening of the doors, Mr. William Weightman, of Powers & Weightman, has had arranged and applied a system of levers and rods, connecting the furnace door with the damper, so contrived that whether there be one or more doors to one furnace, or to which one damper is supplied, the act of opening any one door will invariably close the damper. Whether this application of simple and ingenious devices is new or not, every engineer will regard it as one of the good things for aiding the better management of steam-boilers.

TO PREVENT RUST.—Prof. Olmstead, author of "Olmstead's Natural Philosophy," gives the following as a preventive of rust: For farm implements of all kinds, having metal surfaces exposed, for knives and forks, and other household apparatus, indeed for all metals likely to be injured by oxidation or "rusting:" Take any quantity of good lard, and to every half pound or so, add of common resin ("rosin") an amount about equal to the size of an egg or less—a little more or less is of no consequence. Melt them slowly together, stirring as they cool. Apply this with a cloth or otherwise, just enough to give a thin coating to the metal surface to be protected. It can be wiped off nearly clean from surfaces where it will be undesirable, as in the case of knives and forks, etc. The resin prevents rancidity, and the mixture precludes the ready access of air and moisture. A fresh application may be needed when the coating is washed off by friction of beating storms or otherwise.

NEW LEVELLING DEVICE.—Every millwright experiences difficulty in levelling shafting, when pulleys, hangers, walls, etc., are in the way of applying the "straight-edge" from bearing to bearing which it is desired to bring to a level. Mr. George Jenkinson, millwright at Powers & Weightman's, has adapted a very simple and readily-applied apparatus, which can be used without the usual "level-boards" and "straight-edges," and without regard to the obstructions in the way.

He takes an ordinary $\frac{3}{8}$ or $\frac{1}{2}$ gum tube, say 16 or 20 feet long, and to each end secures a stout glass tube 10" to 12" long; fills the gum tube with water to within, say, 4" of each end of the glass tubes, puts a cork in each, and the apparatus is complete. To use this, hold each glass vertically at the bearings, and withdraw the corks; the water will soon find its level, and show how the bearings stand with regard to the level line.

STEEL WIRE ROPES are coming more and more into use on shipboard, in mines, and for other purposes. An Eastern exchange, in alluding to their introduction on the great lakes as tow lines, speaks of one 660 feet long, and weighing only 800 lbs. Steel traction ropes are used by three street railroads in this city to haul the cars over our high hills. The California Street railroad employs a wire 1,800 feet long, which was made in two pieces of 900 feet each, $1\frac{1}{2}$ inches in diameter. The Clay Street road employs a wire made in a single length, 11,000 feet long and one inch in diameter. All these wires were made by A. S. Hallidie, of this city, from the best English crucible steel.

PREPARING WOOD FOR POLISHING.—After staining, size over with varnish or polish; for mahogany, walnut, and similar woods, finish the surface with No. 0 sandpaper; oil with linseed oil, coloured red with alkanet root; let them stand for a time until the oil has thoroughly soaked in, then proceed to fill in the pores with the following composition: Plaster of Paris, 3 parts; tallow, 1; and a little red polish (ordinary polish coloured with dragon's blood). Work the whole until it is thoroughly mixed and becomes a crumbly mass. Rub well into the wood with a piece of rag, clear off all the superfluous filling in, and the surface is ready to body in and polish.

FLUXES FOR ALLOYS.—The best flux for alloys of copper and tin is resin. It should be added when the metals are almost melted. Another good flux is sal-ammonia. In using this flux the copper is usually melted first and the flux added. When it is in the mushy state, after the flux has been put in, the zinc and tin are then added. A good flux for old brass is common resin soap. It should be added in small lumps and stirred down into the metal when in the molten state. In forming alloys of different metals the molten metals should always be kept under a covering of black glass or pulverized charcoal, to prevent oxidation.