

pores without congealing on the surface, thus insuring permanency.

FINISHING.—The car is now ready for the finishing coats of varnish. First of all it has to be carefully washed down with cold water to clean off any soiling that may have got on during the striping and ornamenting. The cleaning must be done with brush, sponge, and chamois, and so thoroughly as to remove the smallest particles from mouldings, &c., as the varnish brush is sure to find them and bring them to the surface. In my experience there are comparatively few, even of good workmen, who can varnish a car properly. Some are so afraid of sagging that they put the varnish on sparingly, while others, with the greatest ease and safety, will put a third more on the body without the least tendency to sag—and then again the work of some is much more even and regularly flown than that of others using the same material and on the same body. On the finishing coats as much varnish should be put as they will safely carry. For some time I have abandoned rubbing between the coats. As a matter of beauty, I would prefer a slight rubbing of the first coat, but I willingly sacrifice this advantage to secure what is of more importance—namely, economy and durability. Instead of rubbing before the last coat of varnish is applied, the previous coat must be thoroughly hard and washed down with cold water. Then by using every precaution to get rid of dust, and with care and proper handling, the last coat should stand out, and the entire job reflect credit on the painter and also on the vendors of the materials used in the work.

COLOURING.—The colour on the Michigan Central Railroad cars consists of golden ochre ground heavy in oil along with medium chrome ground in turps and Japan, and brought to the proper consistency with turps. To finish a car properly with this colour, four coats are required, and from first to last there cannot be too much care taken in laying it on in order to secure a solid job and lose nothing of what has preceded. The colour should be worked quickly, put on sparingly, brushed out well and laid off evenly. I would recommend a flat sable brush as the best and most economical for laying colour.

Very often the labour expended in bringing a car up to the point of colouring is completely lost by the mixing of the colour, or by the manner in which it is laid. I make no change in the formula of these coats, and do not use any varnish in last coat. The work should be sand-papered and carefully dusted off after each coat, and one day's time at least should intervene between the coats.

STRIPING AND GILDING.—Striping colours are ground heavy in boiled oil with a little Japan gold size and thinned with turps. Furnish each man with a gauge, divide the car into sections, and let each finish his allotted portion. Emulation is thus excited, and each man is responsible only for his own proper work, with no risk of blame that is undeserved. For gilding, I find that a quick size is the best. I use Noble and Hoare's gold size with about one-third their wearing body varnish.

VARNISHING.—The car is now ready for varnishing. For the first coat I use an outside rubbing varnish, which can be rubbed down very close in four days and washed clean. This forms a beautiful surface for striping and ornamenting. The men who do the striping should be so arranged that each may work on his specialty, as this secures better work by exciting a greater desire to excel.

HINTS ON THE USE OF PLASTER OF PARIS.

The plaster may be made to "set" very quickly by mixing it in warm water to which a little sulphate of potash has been added. Plaster-of-Paris casts, soaked in melted paraffine, may be readily cut or turned in a lathe. They may be rendered very hard and tough by soaking them in warm glue size until thoroughly saturated, and allowing them to dry.

Plaster of Paris mixed with equal parts of powdered pumice stone makes a fine mold for casting fusible metals; the same mixture is useful for encasing articles to be soldered or brazed.

Casts of plaster of Paris may be made to imitate fine bronzes by giving them two or three coats of shellac varnish, and when dry applying a coat of mastic varnish, and dusting on fine bronze powder when the mastic varnish becomes sticky.

Rat-holes may be effectually stopped with broken glass and plaster of Paris.

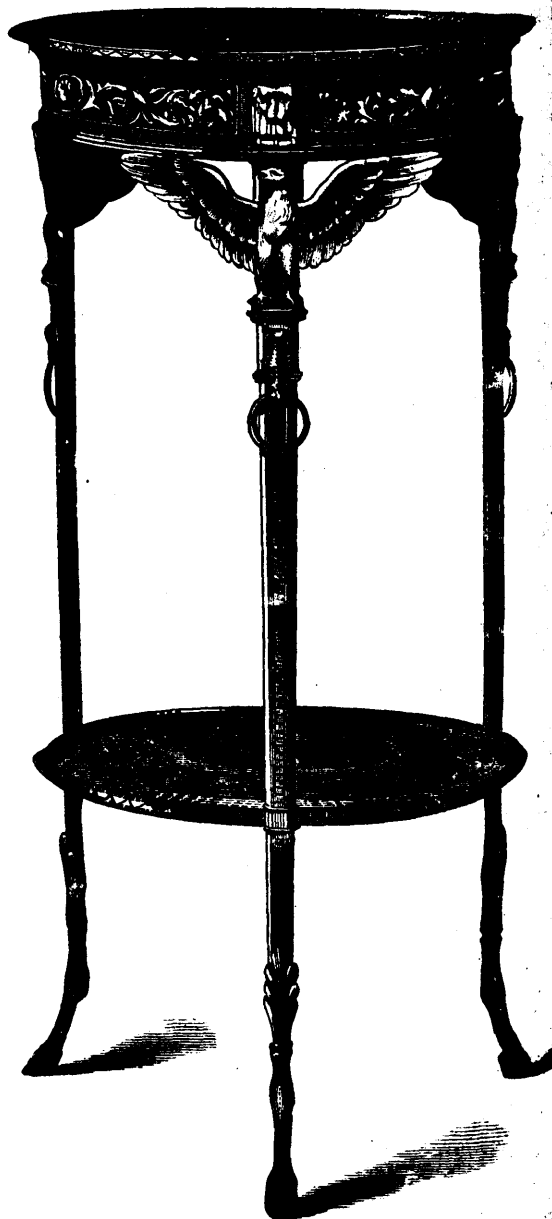
The best method of mixing plaster of Paris is to sprinkle it into the water, using rather more water than is required for the batter; when the plaster settles pour off the surplus water and stir carefully. Air bubbles are avoided in this way.—*Boston Journal of Chemistry.*



A HANGING CABINET.



A new arrangement for fastening the feet of lounge without glue.



ORNAMENTAL CAST IRON TABLE.