

PRACTICAL PATTERN-MAKING

"A thoroughly practical work on the art of making patterns, written by a pattern-maker with thirty years' experience. Contains information on pattern-making and pattern-makers in general, also a detailed description of the necessary materials, and how to use them, then the tools, both hand tools and machine tools, with special chapters on the Lathe, the Band-saw and the Circular Saw, with many examples of work which may be done on these machines. A complete section of illustrated examples of pattern-work in wood, with many pages of metal pattern-work, gating and plate work, both vibrator and stripping plates, are shown. Some mathematics for the pattern shop are given. And finally the cost, marking and record of patterns is explained and illustrated."

by

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Excerpts:

Part Second, Chapter I: Lumber.

"For the general line of pattern work there is probably no better material to be found than white pine. White pine is light, easily worked, takes glue and varnish nicely, and is fairly durable..." (p. 31)

"In mahogany we have a timber which, having a hard, dense surface, is invaluable for small, fragile patterns or for patterns which are in constant use. It is more difficult to work than pine, and doesn't take varnish and glue so readily, but it will stand lots of abuse." (p. 33)

Part Second, Chapter II: Varnish.

"Pattern-makers use varnish to fill the pores of wood patterns and thus make them more or less impervious to moisture. Any old varnish will do this, but when it is also expected that the varnish will give a smooth, hard surface, we must be careful in the selection of our varnish. Another vital point is that it must dry quickly. Thus our choice is narrowed down until, in place of being able to use any varnish, we are really restricted to the one kind — shellac varnish." (p 35)

"There is nothing to be had quite as good as shellac cut with grain alcohol. I have tried nearly everything that has been put on the market for the last twenty years, and have gone back to the real gum and grain alcohol, mixing it myself, and getting results that are entirely satisfactory.

Use a glass, or glazed earthenware jar, to prepare the shellac. Put in the required amount of gum, and pour in sufficient grain alcohol to cover the gum, and you will find that the resulting mixture will be about right for general use—a little too heavy for fine, light work, which is easily corrected by the addition of a little more grain alcohol, and heavy enough for large surfaces.

Shellac varnish should be fresh and always kept in a glazed vessel. Don't use oxalic acid to clear a pot of old varnish, so old that it won't dry hard. You had better empty your can into the garbage barrel and fill up with varnish so fresh that it will not need the oxalic acid to make a respectable-looking job. In short, you can add nothing to the varnish, made as above, which will improve it." (p. 35-36)

"While the shellac varnish in its natural color gives the best of results, it is sometimes thought advisable to color it. Black, the most common color, is produced by the addition of lampblack; red is *best* made by the use of Chinese vermilion, and blue of an indifferent quality may be produced with Prussian blue. It is unnecessary to state that all of the coloring used should be dry and very finely pulverized.

In mixing colored varnish, add the coloring matter to a small quantity of varnish and mix thoroughly to a smooth paste, then add varnish, and alcohol if necessary, until the mixture is of the consistency necessary to spread and cover nicely. It requires some experience to produce both color and gloss, which are always the ocular proof of a good surface." (p. 37)

Part Fourth, Chapter I: Common Practice.

"The mixture for brass patterns contains an overplus of tin, and should be all new metal; the large percentage of tin gives a good surface for the castings, which is more desirable than color for this work.

Sometimes white metal is used for patterns which are to be gated. All I have to say about this is—don't. White metal patterns are only to be tolerated where it is necessary to avoid shrinkage.

Aluminum castings are coming into use for gating and also for single patterns. Their extreme lightness is the only point in their favor, as they are difficult to treat, especially in soldering, and the shrinkage makes trouble. These objections, together with the fact that the foundry usually has to make a special pot of metal for them, almost prohibits their use.

Copper and tin, with a little spelter, make a metal that is easily finished, easily soldered, and has a harder surface than aluminum or any of the so-called white metals." (p. 227-228)

"Gates may be of cast metal or of hard sheet brass, the central or main gate being usually a casting. Sheet-metal runners are stronger and will cost more to make up. This extra cost is partly offset by their durability." (p. 228)