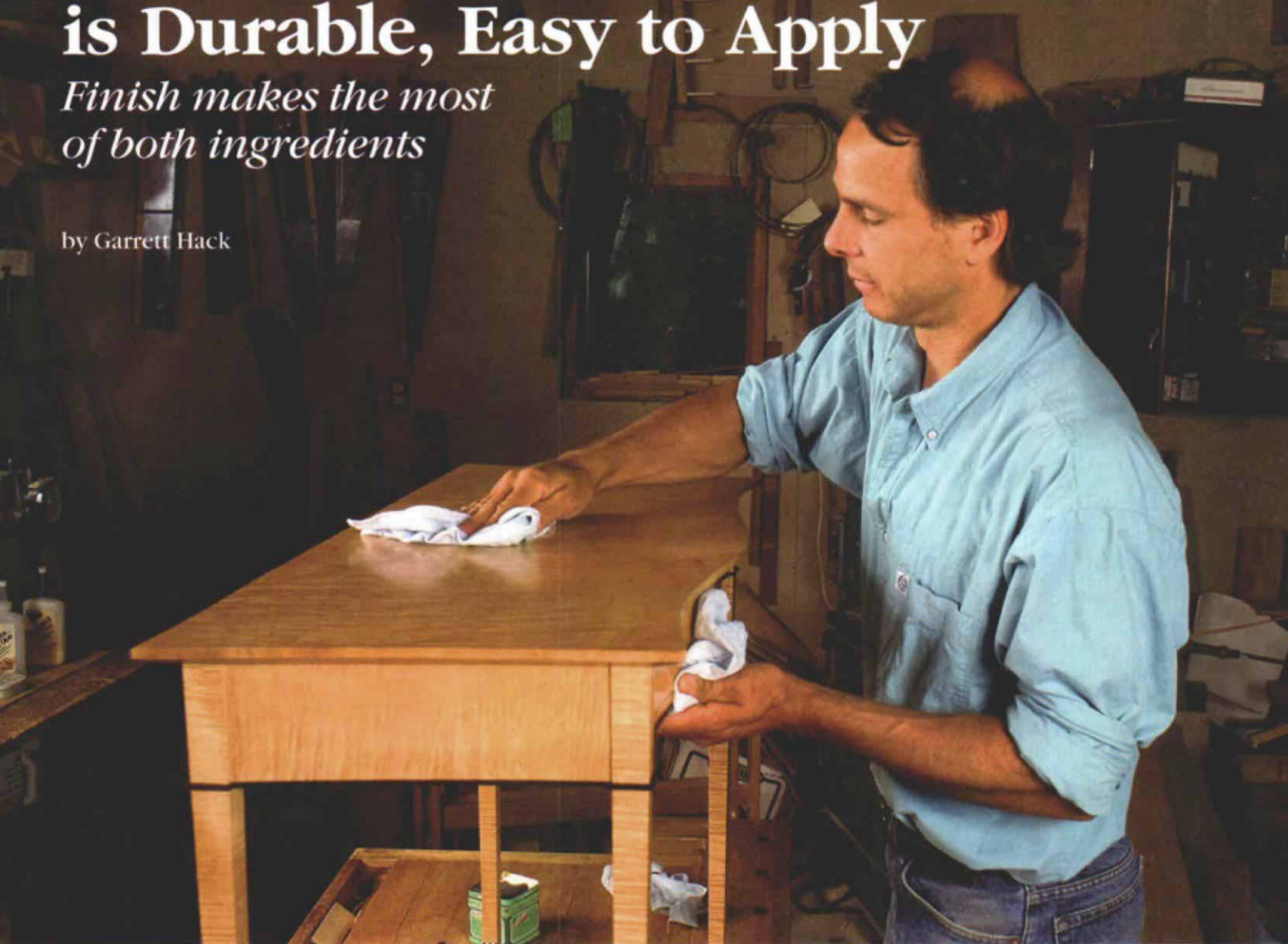


Oil-Varnish Mixture is Durable, Easy to Apply

Finish makes the most of both ingredients

by Garrett Hack



Finishing just isn't my cup of tea. Planning the design and construction details, picking the wood and carefully laying out the parts to match the wood's color and grain are all exciting. Cutting joints and planing by hand are pure pleasure. But putting on a finish is my least favorite part of building furniture. That may be one reason I've settled on a finish that gives me consistently satisfying results with a minimum of effort.

I first learned about this hybrid finish—a mixture of oil,

varnish and turpentine—at the woodworking school I went to in Boston in the late 1970s. Since then, I've experimented with the ingredients, the proportions and the method of application. These days, I use this finish on everything from fine furniture and kitchen cabinets to the handles on the tools I use around my farm.

The finish is mixed from either tung oil or boiled linseed oil and varnish, thinned with turpentine. It's easy to apply, doesn't require a special dust-free finish room and, like any

oil finish, it won't obscure the texture and character of the wood. Yet because of the varnish, it offers more protection than oil alone.

The varnish also helps the finish build faster than a straight oil finish, eliminating much of the drudgery of application. Because the proportion of varnish is relatively low, this finish is as easy to repair or renew as an oil finish. And it can be tinted with artist's pigments or oil-based stains to match any wood. There's no need to fill pores on open-grained woods: Sanding

the finish creates a slurry of wood dust, oil and varnish that fills the pores beautifully.

Don't sweat the finish proportions

When mixing this finish, I don't get overly scientific about measurements. The finish is very forgiving, and many proportions will work. Generally, I mix them in approximately equal measures. If I want more protection, I'll add up to 50% more varnish. If it's too thick (and always for the first coat), I'll add more turpentine to get better



*Crowning touch—
Author Garrett Hack
tops his varnish-oil
finish with wax.*

the few who still use them. Some of these varnishes take weeks to cure fully.

Modern varnishes are a combination of synthetic resins in an oil vehicle. Among the oils used by finishing manufacturers are soya, safflower, tung and linseed. The proportion of oil to resin in these varnishes ranges widely, and this affects how long they take to cure, as well as how tough and how elastic the cured finish film will be.

A spar varnish has a comparably high oil content, which takes longer to cure and leaves a fairly elastic surface that accommodates wood movement. Polyurethane varnishes dry quickly and form a tough, durable, but less elastic, coating. Also, after the finish has cured, repairs or additional coats don't bond well.

In terms of drying time, toughness and elasticity, alkyd-resin varnishes fall somewhere between spar varnish and polyurethane. They're not as tough as polyurethane, but they're more elastic, and any coats applied after the varnish has cured still bond well.

I have used all three of these varnishes in my finish with good results, but my favorite is spar. The main reason is color. Spar is the darkest. In combination with linseed oil, which also tends to darken wood, spar varnish significantly affects the color of some woods, like cherry. I happen to like the effect this mixture has.

Right away, cherry and bird's-eye and curly maple look older. But on darker woods like walnut, the color change is barely perceptible. If you want to preserve the light color of a wood like maple or ash, use a polyurethane varnish because it imparts the least color.

Most varnishes also have ultraviolet light (UV) inhibitors added to their formulations to keep the finish in the can from turning an unattractive yellow and to slow the natural aging ef-



Ingredients are simple; proportions are forgiving. Linseed or tung oil, varnish and turpentine make up the author's favorite finish. A pigment-ed oil stain can be added to give the mixture a little color.



Flood the surface. The first coat will soak into the bare wood, so check the piece carefully for dry spots after it's been covered entirely. Re-coat areas that dry in the first 10 minutes or so.



Rub off the excess. Pay close attention to the inside corners and the areas around details like cock beading, where the finish can collect. It's more difficult to remove excess finish after it has hardened.

surface penetration. If I'm going to color the mixture, I add an oil stain or artist's colors, keeping it light initially and darkening it more if need be.

Spar varnish is a favorite

Varnishes have been around for a long time. Really old-fashioned varnishes are a mixture of plant resins (such as amber), oils and a solvent, which is heated and combined in formulations often kept secret by their makers. Even the techniques for applying these varnishes are carefully guarded by

Brush on subsequent coats, one area at a time. Keep checking areas you've already coated to see whether they've started to become tacky. After the first coat, the finish becomes sticky quickly.

feet of sunlight on wood.

All varnishes are naturally glossy. The sorter luster of a satin or semigloss varnish results from the addition of a flattening agent, such as aluminum stearate or silica, which breaks up the reflection of light off the wood's surface. Stick with a gloss for the toughest finish, and use steel wool to get a satin finish, if that's what you're after.

Boiled linseed or tung oil and turpentine

For the oil component of my finish, I use either boiled linseed oil or tung oil (also known as China wood oil). Boiled linseed oil is made by steam-heating processed oil from raw flax and adding metallic drier compounds. The nondrying portion of the oil is removed, making what's left suitable as a finish.

Tung oil also is heat-treated, which speeds its curing time when exposed to oxygen. Tung oil is more expensive than linseed oil. However, it cures to a tougher, more water-resistant film, and it doesn't darken the wood as much. If you want maximum protection and a light color, use tung oil. Don't use raw linseed oil because it won't dry.

I thin my varnish and oil finish with turpentine. This increases surface penetration and speeds drying time. High-quality turpentine is getting harder and harder to find. It largely has been replaced by mineral spirits, which should work. I stick with turpentine because it's always worked well for me.



Two rags are better than one. To remove excess finish after each coat, the author uses two rags. The first one picks up the majority of the residual finish; the second ensures the wood is really dry.

Brush it on; rub it off

The key to a really good finish with this mixture, or any finish for that matter, is to prepare the surface well. For me, this usually means a planed or scraped surface. I find this to be faster and more enjoyable than sanding. If you do sand, start with a fairly coarse grit, and work up to at least 220-grit. But it's less important which grit you end up with than how thoroughly you work through each grit to eliminate scratches from the previous grit.

For the first coat of finish, I brush on the mixture, flooding the surface and re-coating any dry areas that appear (see the



center photo on p. 49). After half an hour or less, any finish still on the surface will start to feel tacky. As soon as it does, I start rubbing with clean cotton rags to absorb it (see the bottom photo on p. 49).

This initial coat is the easiest to apply because most of it soaks right in. Nevertheless, it's important to wipe off every bit of excess so that the surface doesn't turn into a sticky mess. When the surface is thoroughly rubbed dry, I'll set it aside for at least 24 hours before re-coating. Make sure you dispose of the rags properly. Either spread them flat outside until they've dried or put them in a metal bucket with a lid. Oily rags can combust spontaneously.

Subsequent coats of finish go on in the same way, except that they tack up more quickly and require more rubbing to remove the excess. How fast these coats tack up depends on the temperature and humidity and on the type and amount of varnish in the mixture. Polyurethane varnishes cure within a few hours and can tack up very quickly; spar varnish can take twice as long.

When finishing a large piece of furniture, I work on one section at a time. I keep checking the areas I've already coated so that when the finish begins to tack up, I can start rubbing immediately (see the top photo on the facing page). If I happen to get behind, brushing on a fresh coat of finish softens the tacky layer enough so that I can rub it down.

I like to use two rags, one for most of the excess finish and one for a final once-over polish (see the photo at left). Any places that aren't wiped clean will feel crusty. I don't worry about these too much because I can either rub them down with steel wool or rub especially vigorously when wiping off the next coat of finish.

How many coats to apply is a matter of choice and good judg-

ment. Each layer adds a little more depth to the finish, some gloss and some additional protection. For a chest of drawers, three coats is fine. For a table that's going to see hard use, I would go with a minimum of four coats—five would be better. When I'm satisfied with the finish, I wait at least 24 hours, and then I top it off with a paste wax made from beeswax, boiled linseed oil and turpentine (see the box at right).

Using the finish to fill the grain

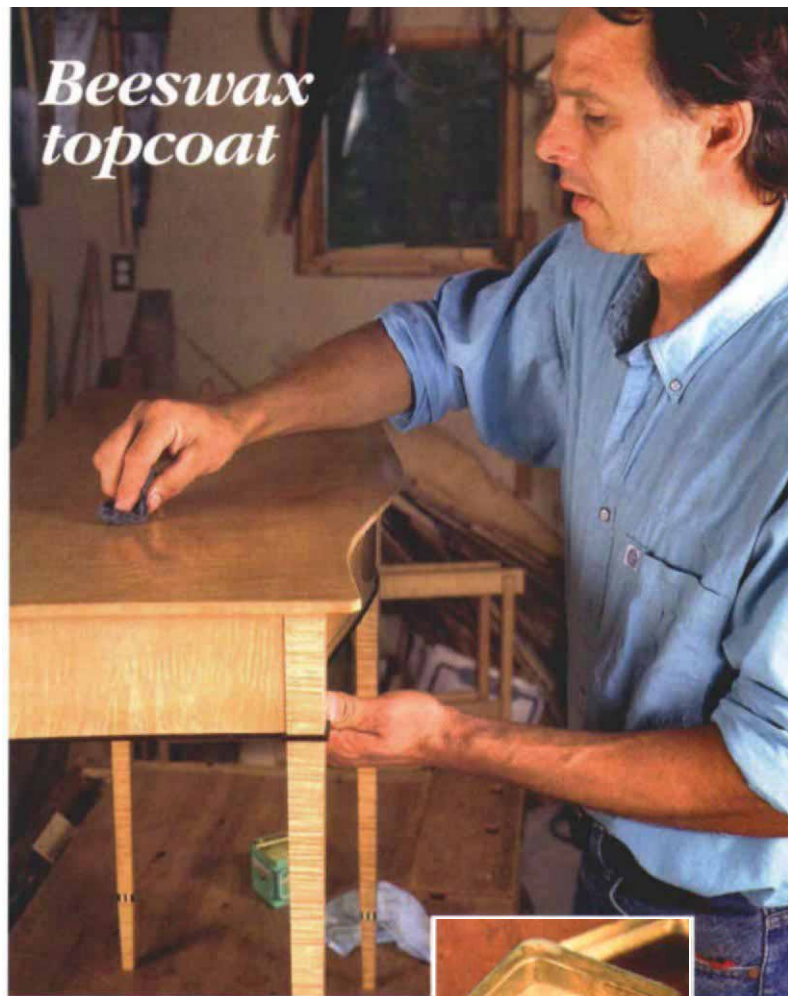
Another one of the beauties of this finish is that open-grained woods such as red oak or ash don't need to be filled before finishing. Lightly sanding the wet finish with 220-grit (or finer) sandpaper smooths the surface and creates a pore-filling slurry. I usually apply the first coat in the usual manner and sand the mixture after applying it for the second and third coats.

This method is easier than using a filler, and there are no problems with compatibility or bonding between the layers of finish. I avoid wet-or-dry, silicon-carbide sandpaper because the dark abrasive can color the pores. Instead, I use garnet or aluminum-oxide abrasives.

Rejuvenating the finish is easy

If the finish needs repair or if it just starts to look tired, it's easy to fix. First clean the surface well with 0000 steel wool, turpentine and a little boiled linseed oil, and then wipe the surface until the rags come clean. A light sanding with 320-grit sandpaper will take care of any stubborn areas the steel wool can't handle. Apply a fresh coat of finish, and rub it out with clean rags. After the finish has fully cured, reapply a wax topcoat.

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My favorite topcoat is made of a combination of beeswax, boiled linseed oil and turpentine. This mixture is not as hard as a paste wax made with carnauba, but it's durable enough and it smells great.

In a double boiler on very low heat, I melt together a hunk of light-yellow beeswax (saved from comb honey I bought from a local beekeeper) and slightly less than equal amounts of oil and turpentine. I aim for a consistency similar to butter warmed to room temperature. It should be soft while maintaining its shape (see the inset photo above). If the wax mixture cools to something harder or softer than this, I add more oil or wax, whichever is appropriate, and rewarm. This recipe is very forgiving.

I apply the wax with 0000 steel wool, rubbing out the cured final coat of my oil-varnish mixture at the same time (see the photo above). If the wax is the right consistency, it smooths out easily without feeling gummy. After a few minutes of drying, I buff it with a clean rag to a satin sheen (see the photo on p. 48). To maintain the finish, just re-wax. — G.H.