It's too bad window manufacturers abandoned the counterweighted design. Spring-loaded and friction-fit windows are easier for manufacturers to assemble, but that's about their only advantage. Springs and friction must constantly resist the force of gravity, while counterweights work in unison with it. And repairs in new windows mean replacement of costly manufactured components which may become obsolete and unavailable due to further "improvements" in design.

Contrast this to the simple sash cord needed to repair a counterweighted window. Unlike modern replacement parts, its cost is minimal, it's not difficult to replace, and it's in no danger of obsolescence. Properly kept, counterweighted windows were designed to last the life of the house.

Anatomy of a Window

A quick description of window anatomy shows there's nothing mysterious about them: A window is simply an open-ended box set through a wall. The bottom of the box, the sill, is of heavier stock and slopes to shed water outward. The stool caps the sill on the inside. The other three sides are called the jamb. The two vertical sides are sub-classified as stiles. The sash is the wooden frame that holds the glass, and is housed within the jamb. The bottom horizontal member of the outer (upper) sash, and the top member of the inner (lower) sash are called meeting rails.

Double-hung windows, which we're dealing with here, are so named because there are two sashes hung in place on sash cords or chains. The sashes slide up and down in runways called sash runs, formed by mouldings affixed to the stiles. The first moulding is the stop, and the one behind it is the parting bead, which parts the inner sash from the outer. Removing both sashes means removing both mouldings.

Near the top of each sash run is a pulley. The cords pass over the pulleys into the weight pockets, and there are tied to sash weights. The weighted mechanism acts as a counterbalance so the window stays put.

(Continued on page 138)
More On Flue Liners

To The Editor:

YOUR ARTICLE on the do-it-yourself flue liner (OJH, Sept. 1979) reminded me of a similar project we executed successfully on our home. The theory was similar, but the materials used were quite different.

FOR THE LINER ITSELF, we used standard corrugated galvanized drain pipe (the kind that's used to make drainage culverts under roads). This pipe has several advantages: (1) The corrugations provide self-locking in the surrounding mortar—eliminating the need for a clamp at the top of the chimney; (2) The pipe comes with attaching collars, which makes assembly a breeze. The pipe is available through distributors that sell to road contractors.

TO FILL THE SPACE between the bricks and the pipe, instead of concrete we used a material called Zonolite. This is a building material that is used (among other things) to pour into the spaces in cinder block walls to add insulation. There are several types of Zonolite; the type we had was mixed one bag of portland cement to one bag of Zonolite. The advantage of Zonolite over concrete is its extremely light weight. This can be an important factor if you have to haul many buckets of the stuff up to the roof.

IN OUR CASE, we had four chimneys to do. So I built some scaffolding that not only provided a work surface around the chimneys, but also let me build a mortar mixing box right up on the roof. I worked with two helpers on the roof, letting down a section of pipe with a rope, fastening a new section with a collar, then lowering it down another section. This process continued until the corrugated pipe came to rest against the damper.

AFTER THE PIPE WAS IN PLACE, I stuffed all the holes around the damper tight with newspaper, then poured a loose mixture of Zonolite down the chimney to pack in around the pipe. After the Zonolite cured for a couple of days, I had a mason rip out the old damper and install a new one—taking into account the revised geometry due to the new chimney liner.

ONCE THE SCAFFOLDING was in place on the roof, the work went quite rapidly. We were able to line two chimneys in a single day.

S. M. Mahan, Jr.
Montevallo, Ala.

Concrete Concerns

To The Editor:

I WOULD LIKE to add some cautionary comments to the article on flue liners in your September 1979 issue. After inspection of many old chimney stacks, I would suggest that the procedure outlined in the article be used only as a last resort and if it is impossible to install a more conventional tile lining. This caution is especially true in colder areas of the country that are subject to freeze-thaw cycles.

(1) Concrete mixes that are high in water tend to shrink when they cure. So putting a soupy mixture of concrete down the chimney to surround the galvanized pipe may mean that you're going to get small cavities created when the concrete shrinks.

IF WATER penetrates any gaps in the brickwork during the winter, water that is trapped in these voids can freeze—with consequent damage to the masonry. That's why experienced masons try to leave an air space between a tile lining and the chimney bricks. That way, if any water intrudes, it can drain harmlessly away.

(2) If the chimney was constructed of lime mortar, I'd be wary of using a portland cement concrete. The OJH has carried numerous warnings about adding "hard" portland cement to "soft" lime mortar brickwork.

Charles Walker
New York, N.Y.
Restoring A Block In Chicago

By William L. Lavicka

MY WIFE, Alys, and I had practiced for the fine art of renovation by experimenting on a large apartment on the west side of Chicago before charging out to do our own home.

OVER THE COURSE of three years we managed to do all the building trades using a bedroom as our workshop. We made plenty of mistakes, but in the end we had a pretty good handle on old buildings. We also knew that we liked the convenience of inner city living and wanted to buy a house in the area.

NOT JUST ANY HOUSE, but an 1880's house complete with cornices, mansard roof, elegant entrance hall, marble fireplaces, parquet floors, tall windows and high ceilings. But everything that was available was plain and often "remuddled." However, in the course of our intensive search we found four other couples who were looking for the same things. Separately, we had all zeroed in on the 1500 block of West Jackson Boulevard, twelve blocks from the Loop.

WHEN WE SET OUT TO FIND out why this block alone had remained untouched by years of urban renewal, we discovered that the majority of the 29 houses and small apartment buildings were either owned or managed by elderly women. They were much too strong-minded to have been displaced by mere bulldozers or frightened by the deterioration around them. But now, in 1974, they were generally willing to sell or retire.

WE FIVE COUPLES PLEDGED to buy together on this block. We hoped to interest additional new buyers as well as to encourage those owners who wished to stay to renovate and improve their properties.

THROUGH GOOD HARD PUBLIC RELATIONS WORK and solid backing by the city we were able to find new buyers for about 20 of the houses within one year. All sales were made on a one-to-one basis without real estate agents, and we made special efforts to interest buyers who planned to live on the block. I published a brochure on the block and a half dozen articles were printed in Chicago papers. We brought our plan to Lewis Hill, the Commissioner of Planning and Development for the City of Chicago.

"WE LIVE IN THIS TREMENDOUS SLUM," we told him. "We need assistance. Tell us before any building is to be torn down. Involve us with the city plans."

NO ONE HAD EVER VENTURED into this district...
A view of the dining room from the second parlor before restoration.

ALYS' HIGHEST PRIORITY was the kitchen. I had salvaged white marble slabs from a derelict apartment building; they became our kitchen counters. A bricklayer built the barbeque stove enclosure. Standard kitchen cabinets with specially made cornice and new appliances bought at a local repossession outlet completed the kitchen.

After four years of work, the 6,000 sq. ft. house looks as it did when Chicago's West Jackson Boulevard was an elegant neighborhood within walking distance of the Loop.

Earlier, the powers-that-be were intrigued. Mayor Daley toured the area. A demolition order for the block was removed. We were given two years to sink or swim. The city, for its part, gave us funding to restore the boulevard to its former narrower width, to resurface, install new curbs and gutters, and plant a double row of linden trees. For just over $200,000, eight hundred feet of West Jackson Boulevard began to look as it had when it was home to the mayor of Chicago, business magnates, doctors and lawyers.

FINANCING WAS DIFFICULT to obtain, and most of the new owners spent sweat equity. For the better part of the first year we all held down full-time jobs and worked on our buildings at night and weekends. We were hailed by the papers as "urban pioneers," and it was true. There was a certain wagon train aspect to our endeavor. Our prairies, however, were ones of broken glass and brick, and our trails were of asphalt.

ABOUT A QUARTER OF THE WAY through our own renovation, Alys and I decided that I should devote all my time to the house while she held down a full-time job. In the two years since 1974 we had renovated two apartments—one in the rear coach house and one in the main house at garden level. These provided income for utilities, taxes, insurance and the purchase money mortgage.

The dining room as restoration is almost finished—the floors are not yet sanded.
Evidence pointed to a plasterwork arch between the front and back parlors. Bill reconstructed the arch in wood with plaster corbels.

The patching, plastering and painting continued downstairs with my piece de resistance being the replacement of an arch that once existed between the first and second parlors. It had evidently been similar to the ornate plaster arch which remained upstairs over the alcove in the master bedroom.

My forte, however, is working with wood, so I pieced and routed out an arch in wood to slip into place. A mould was made of expanding foam on the upstairs corbels. Again, amateurs beware. Plaster of Paris was the casting material for the downstairs. Because the relief was light and there had been layers of paint on the original I had to carve the relief to deepen in on the castings.

Renovation has changed more than our house. Our block—the Jackson Boulevard Historic District—is on the National Register of Historic Places. Houses on neighboring blocks have been renovated. Alys and I are now partners in Historic Boulevard Services, a company founded for the express purpose of renewing and restoring old buildings.

The kitchen (previously purple and brown) was the first room in the house to be renovated.

The address of Historic Boulevard Services is 1520 West Jackson Boulevard, Chicago, Illinois 60607. Telephone: (312) 829-5562.
Disassembly

It's possible to do all the work from inside. Keep three things in mind while working: (1) When scarifying wood is unavoidable, do it where it won't be seen. (2) When you pry against or hammer on visible parts of the window frame, use a block of wood to protect the surface. (3) Never leave a loose sash sitting upright in the jamb. A gust of wind will easily knock it over.

First remove one stop to take out the inner sash. Before prying it loose, use the utility knife to score the paint along the seam between the stop and the jamb. Work the pry bar under from behind the stop bead to keep any previous workman may have discarded it and un-doubtedly nailed the section back in. It's against it when closed. (This is a common way of keeping the sash up and the cords some people do it to keep burglars out.) If finish nails were used, just drive them on through. If common nails were used, get under the heads and pull them out. Here, a bit of scarifying could be the price of somebody's earlier incompetence.

Now, examine the inner sash runs. You'll see a screw, probably encaustic with paint, about a foot or eighteen inches up from the sill. A section of the stile is removable here, to give access to the weight pockets and that screw holds the section in place. It may take awhile to find and remove the access plate. If there is no screw, a previous workman may have discarded it and undoubtedly nailed the section back in. It's usually rabbed to run under the parting bead, and if so you must remove the parting bead on both sides. Reach inside the pockets and pull out the weights.

(Note: Some windows, particularly in pre-1860 and rural houses, don't have access holes. To get to the weight pocket, it's necessary to remove the casement moulding.)

Repair & Replacement

With the window thus dismantled, you're ready for any maintenance tasks. Ridges of paint build up on the sashes where they encounter the stop moulding and parting bead. These ridges should be removed, and there are other areas of excess or loose or flaking paint. I recommend using the sharpened paint scraper because it neatly makes fast work of thick paint. Don't try baring the wood with the scraper, no matter how sharp. If you want bare wood, use paint remover. File the scraper often.

This is the time to repair broken glass, and to replace loose, dry putty. May as well wash the windows too.

Your last step is replacing the sash cords. Cotton rope with a nylon center is sold in hanks, specifically labelled "sash cord." How...
ever, since the same weights and pulleys are used with chain or rope, consider switching to sash chain: it can't rot or stretch or get stiff. This flat steel chain, too, can be purchased in pre-packaged lengths.

IF YOU ARE USING CORD, now the weighted string comes in handy. Push the weighted end over the pulley into the weight pocket and let it drop to the access opening. Tie the free end to the new sash cord and pull the cord into the pocket, down and out through the access. Tie the sash weight to the sash cord. Use a knot that will stay tied but isn't bulky, such as a slip-knot. (Shown)

GRASP THE OUTER END of the cord and pull the weight all the way to the top. Temporarily put a 4-penny finish nail through the cord near the pulley, across the pulley hole. This enables you to attach the free end to the sash without the weight constantly tugging at you.

GAUGE THE LENGTH of new cord according to the old. To adjust the rope length: Hold the sash against the parting bead as you raise it to the top. Look at the weight in the access hole— with the sash up, it should be three inches above the sill. If not, adjust the rope at the sash.

THE SASH CORDS are housed in slots in the vertical sash pieces—called STILES like the vertical jamb members. Put the cord into the slot, and thread it through the hole beneath. Tie a knot in the end and push the knot back into the hole, where it will support the sash. (If you're using metal chain, attach the end of the chain to the sash with wood screws.)

Smooth Sliding

PUTTING THE WINDOW back together is just the reverse of taking it apart. Take the block of paraffin and wax both the edges of the sash and the insides of the sash runs; this helps the sash slide smoothly.

THE ONE CRITICAL STEP is renailing the stop moulding. It shouldn't be so tight that the sash is hard to move, nor so loose that the window rattles. About five 4- or 6-penny finish nails hold the stop on each side. Drive one part-way in, check the movement of the sash, drive another and recheck, and so on till all the nails are in place. Drive them down and set them.

AFTER SOME MINOR spackling and paint touch-up, that obdurate old window is ready for another fifty years of service! 🍂
Gilding With Gold Leaf

By Patricia Poore

GILDING is the application of metal leaf or metallic paint to a surface—and it's been a popular decorative technique since Ancient Egypt. Gilded furniture probably arrived in this country with the first wealthy colonists. In the nineteenth century, gold leaf was applied to furniture, picture frames, and mouldings; stencilled onto walls; and used on window glass.

LEAF IS AN OLD and versatile form of gold. Various metals are supplied in leaves: Silver, aluminum, bronze, palladium, variegated copper, and lesser alloys. But nothing compares to gold leaf; besides its deep-rooted magic, gold will not tarnish and offers an unparalleled brilliance.

XX GOLD (23 karat) is the most pure and important variety of gold leaf. The grades run down through lemon-gold (18 karat) and pale-gold (16 karat), to white-gold (12 karat), which is half gold/half silver, and has its own special applications.

GOLD LEAF is supplied in books of 25 leaves, each leaf measuring 3-3/8 inches square. The gold is beaten down to an approximate thickness—or rather thinness—of .0000035 inches (three and one-half millionths, or three hundred thousand leaves to an inch.) One book covers 1.5 sq.ft., and costs $7-$8.

Old Techniques

THERE ARE TWO distinct methods in gilding. SURFACE GILDING is the application of metal leaf to the surface of a solid object. In surface gilding, the leaf is transferred to an adhesive ground (size) straight from the book. The size has an oil/varnish base. GLASS GILDING uses a water-based size with a binder such as gelatin. A gilder's tip is used to transfer the leaf from the book to the wet size on the glass.

THE PUBLIC LIBRARY may have a book or two about surface gilding, especially on antique furniture. But the only book that explains glass gilding in enough detail is Raymond J. LeBlanc's GOLD LEAF TECHNIQUES. (See box, p. 142. This book is a gem; the author writes about his craft with pride and integrity, yet with a plainness and humility that somehow keeps the craft from escaping into Art. All phases and all nuances of gilding are explained.)

A STEP-BY-STEP account of gold-leafing a house number follows. This is not a how-to article, however, as sign-painting, especially with gold leaf, is rather complex. The LeBlanc book does provide all the information you need, but previous experience or some practice after reading the book is recommended. Knowledge of basic brush lettering and a little practice with gold leaf will allow a novice gilder to do a respectable job.

WHETHER OR NOT you try your hand at gold leafing, understanding the process contributes to appreciation of the gilded piece. In our synthetic times, a process that makes use of such earthy materials as beaten gold and fish-bladder gelatin, and that relies on the moisture in one's breath and the oil in one's hair, takes on a nearly mystical quality.

Gold-Leaf House Number

THIS IS A BRIEF OUTLINE of the most basic glass gilding process: Burnished gold leaf with a gelatin/water size. The job was done by an amateur gilder who has minimal signpainting experience. He is, however, knowledgeable in layout and basic drawing, and he possesses patience and a steady hand.

THE MATERIALS used in this job are (in order of appearance): (1) A Bon-Ami cake; (2) Sterile cotton sheets—a drugstore item; (3) White grease pencil; (4) Two gelatin capsules dissolved in one pint of distilled water; (5) A water-size brush—short thick camel hair; (6) XX Gold Leaf; (7) Gilder's tip—a specialized brush; (8) Backing-up paint—mixed Japanese color and rubbing varnish; (9) Signpainter's brush—French brown camel quills, longish and soft; (10) Mahl stick—see pictures; (11) Paper paint cup/palette; (12) Alkyd resin varnish.

CLEANING: The gold will not adhere if there's anything on the glass. Bon-Ami cleans thoroughly without scratching or leaving a residue.

LAYOUT: House numbers and other small jobs are usually laid out in grease pencil on the outside of the glass. A pounce pattern is generally used for larger or repetitive jobs. This is a perforated drawing of the inscription on paper, which is transferred to the glass using a pounce bag (broadcloth etc.) filled with talcum powder, talc and charcoal, or tailor's chalk powder.
1 LAYOUT: On outside of glass, in white grease pencil.

2 SIZING: Water/gelatin adhesive ground is flowed on (inside.)

3 LAYING LEAF: Gilder's tip brings delicate leaf to wet window.

4 REMOVING SURPLUS: Dry cotton removes loose leaf.

5 SECOND GILD: Size flowed over inscription burnishes it.

6 BACKING-UP: Figures are painted over gold. Note mahl stick and paint cup.

7 WHEN PAINT DRIES, damp cotton removes extraneous leaf. Protective varnish is last step.

8 FINISHED JOB: Note choice of letter style.
SIZING: In burnished (mirror finish) gold applications, the gold leaf is stuck to a simple gelatin and water size. This simplest sizing operation is used for the house number. Historically, plain water, egg-white solution, and sized glass (a gelatin made from fish bladders—still available) were used.

THE SIZE is flowed on with a camel-hair brush in an area just large enough for a few pieces of leaf at a time.

LAYING THE LEAF: This is the tricky part. The gold is so thin you can’t touch it. So the gilder’s tip (see photo) is used to pick up the leaf and to transfer it gracefully (good luck) to the wet glass. For each piece, a sheet of the rouged paper that separates the leaves is folded back. (When the gold comes up with the paper because of static, breathing heavily on the paper discharges the static with the moisture in your breath.) Then the gilder’s tip is drawn gently and slowly across your hair—the oil makes it pick up the gold. The tip is brought quickly to the wet glass, and “slapped” into position, where the water pulls the leaf strongly into contact with the glass.

SECOND GILD: About twenty minutes later, the dry gold leaf is rubbed lightly with cotton to remove non-adhering surplus. Then water size is again flowed over the entire inscription, to bring the leaf to a high lustre (i.e., burnish). At this time, small patches of gold are applied where needed.

BACKING UP: When the gold is thoroughly dry, the numerals are painted over the gold, through which can be seen the original grease-pencil layout. The numerals are, of course, painted on in reverse. The paint is a mixture of japanned color and rubbing varnish—fast-drying and tough. For this step you need a small brush, a mahogany stick to steady and guide the hand, and a little hand-held paint cup. (The latter two can easily be made according to directions in the book.)

REMOVING EXCESS LEAF: When the paint is dry (an hour or so later), a damp pad of cotton is rubbed across the inscription to remove all the extra leaf. Dry cotton removes the final residue. This step is done before the gelatin hardens too much and the paint becomes brittle—by the next day.

VARNISHING: In most burnished gold leaf jobs, an outline or shade would be added at this point. In this job, however, the size and configuration of the numbers was considered enough embellishment, and the burnished gold was sufficiently readable. In any case, brushing on a protective coat of varnish is the last step. Alkyd resin varnish adheres well to glass and isn’t much affected by sunlight. It extends the life of the numbers, so the inscription is matte, or dulled. The most popular combination is the two-tone single-gild black outline, known as “Boston Style.” This means matte centers in a burnished outline (two-tone), gilded in one operation with the center varnish applied first (single gild), and the whole letter surrounded by a black or dark outline. Double outlining is another relatively simple way to create a unique look.

THE MATTE PORTION can be placed in a particular position in each letter to give a convex (3-dimensional look). Such convex lettering was popular with signpainters in Chicago.

OF COURSE, COLOR centers in any tint can be painted in instead of matte-finish gold.

BURNISHED FILIGREE ORNAMENTATION is a treatment in which fine-line designs are done in burnished gold in the center of letters. A letter is gilded solid in the burnished gilding, just as before. Then, the letter is backed up in outline only, while a fine design is painted in at the same time. Naturally when the excess leaf is cleaned off, only the gold under the painted decoration will be seen. The open portions can be left, filled in with matte treatment, or painted a color.

EMBOSSED CENTERS are created by tooling a design into unharmed damar varnish. When the gilding is done over the embossed varnish (with water size), the effect is textured. Last, the centers are backed up as usual.

LIKE GRAINING AND STENCILLING, gold leafing is a painters’ craft that has become rare in this century. It’s true that a great deal of skill and experience are needed to be a successful gilder, but the techniques are fairly straightforward, employing uncomplicated tools and materials. Possibilities for application are limited only by the imagination of the leafer.

ORDERING INFORMATION

GOLD LEAF TECHNIQUES, by Raymond J. LeBlanc, is available from:

M. Horowitz & Sons Sign Supplies
166 Seventh Ave., Dept. J
New York, NY 10003
(212) OR 4-3284

The book costs $7.00 plus $1.00 postage. All gold-leafing supplies are available from Horowitz—please telephone miscellaneous orders—and from:

M. Swift & Sons, Inc.
10 Love Lane, Dept. J
Hartford, CT 06101
(203) 522-1181

Swift has a free how-to booklet and distributors nationwide.
While you are in the process of restoring your house to the elegance it had in another century, you too can look as terrific as you would have had you lived in it then. Victorian and Edwardian clothing for ladies and gentleman can be made for you by Nelson Arriaga. Nelson has produced costumes for opera, television, and Broadway shows like "Guys And Dolls." A few years ago, he and his wife, Julia, bought an old house. Since then he has specialized in period costumes and numbers among his clients the staff of The Journal.

Nelson's new catalog, "Victoriana Revived," is now available. There are items that will introduce you gently to the Victorian way of dressing—shirts, ties, collars—subtle accessories. Or some indoor costumes that enable you to be a closet Victorian; an elegant smoking jacket or a Victorian nightshirt. (These items make great gifts.)

Or you can jump whole hog into the 19th century with a double-breasted dinner suit with satin quilted lapels or a plaid Inverness cape (the Sherlock Holmes type.) Ladies may order an elegant evening dress or a wool mantle complete with trim and tassels.

Every item is custom-made so there is a wide choice in fabric, color and trim. Designs can also be adapted from your sketch or idea. House museum staffs or historical societies can order in large quantities.

Of course, custom-made clothing is never inexpensive. But with mass-produced "designer jeans" selling for $75 in New York this fall, what is? An enormous money-saving advantage of period clothing is—it will never go out of style!

To receive a catalog and order form, send $1.00 to: Nelson Arriaga, 418 Grand Avenue, Brooklyn, N. Y. 11238.

(Photograph by Joan O'Reilly)

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