

Building a Secrétaire-Bookcase

Lots to learn from this 18th-century case study

text and drawings by Victor J. Taylor

It's not often that you come across a piece of English antique furniture that can be dated precisely, but glued to one of the drawer linings of this handsome secrétaire-bookcase is the following receipt: "B. Milward [the purchaser]. Jan 25. 1787. Bought of Mr. Evans, Broadmead, Bristol. Price £15.15."

Today the piece stands in the Withdrawing Room of the Georgian House, Bristol, which is a real treasure store of late 18th-century household goods ranging from fine furniture and priceless paintings down to kitchen utensils. It is officially described as Hepplewhite style, but it seems to me that the date is too early for Hepplewhite, and that the piece is more likely late Adam. In drawing this complex piece, I was struck

by how instructive it can be of various features common to much simpler furniture. Rather than follow a strict (and probably oppressive) how-to-do-it formula, I have attempted to present the piece as a tour of period construction practices, with side-trips into alternatives for the present-day craftsman.

As can be seen in the drawing on this page, the piece is composed of five sections: from the floor upwards these are the plinth, the cupboard (containing cutlery and linen drawers, and two butler's trays), the secrétaire, the bookcase and the cornice. These sections were usually made as complete, separate units, then fitted together, although in this piece the bookcase and cornice are combined as one unit.

Often the sections merely rested on each other so that they could easily be dismantled if they had to be moved—indeed, quite often the main cupboard section had handles fitted to it to make lifting easier. Usually the weight of each section kept it in place, with various sorts of blocks and keys serving to keep things from shifting.

Mahogany is used for all show-wood parts, with oak and pine for the hidden parts and groundwork, normal practice for the time. The mahogany is almost certainly Cuban, and the superb "Spanish Feather" veneer is virtually unobtainable these days. All veneer is laid on without benefit of counter-veneer, which would be risky with today's central heating.

In the following drawings, each part of the secrétaire-bookcase is illustrated and its construction explained, beginning with the plinth and working upwards, which is not necessarily the order in which it would be built. All pieces are numbered to correspond to the listing in the bill of materials on p. 60. In each figure, there is a small diagram of the full cabinet—the shaded part of the diagram is shown exploded in the drawing.

In drawing the piece, where it was impossible to see the joints, I have followed orthodox cabinetmaking practice. Doweling, incidentally, was a very common method in the old days. Craftsmen made their own dowels by trimming down a suitable piece of scrap wood, and then hammering it through a dowel plate, a piece of $\frac{1}{8}$ -in. thick metal in which holes of various sizes had been drilled— $\frac{1}{4}$ -in., $\frac{3}{8}$ -in. and $\frac{1}{2}$ -in. were usual. Dowels were often shaped from offcuts from the parts they were intended to join, minimizing uneven shrinkage. Willow was also used; its stems could be made into dowels with hardly any trimming.

At the time this piece was made, French polishing had not been invented (it did not become widespread in England until about 1820), so the piece was probably originally finished with linseed oil and wax, then French polished at a later date.

Victor Taylor, of Bath, England, spent many years in the furniture industry. He has written seven books, and was editor of the British magazine Woodworker.

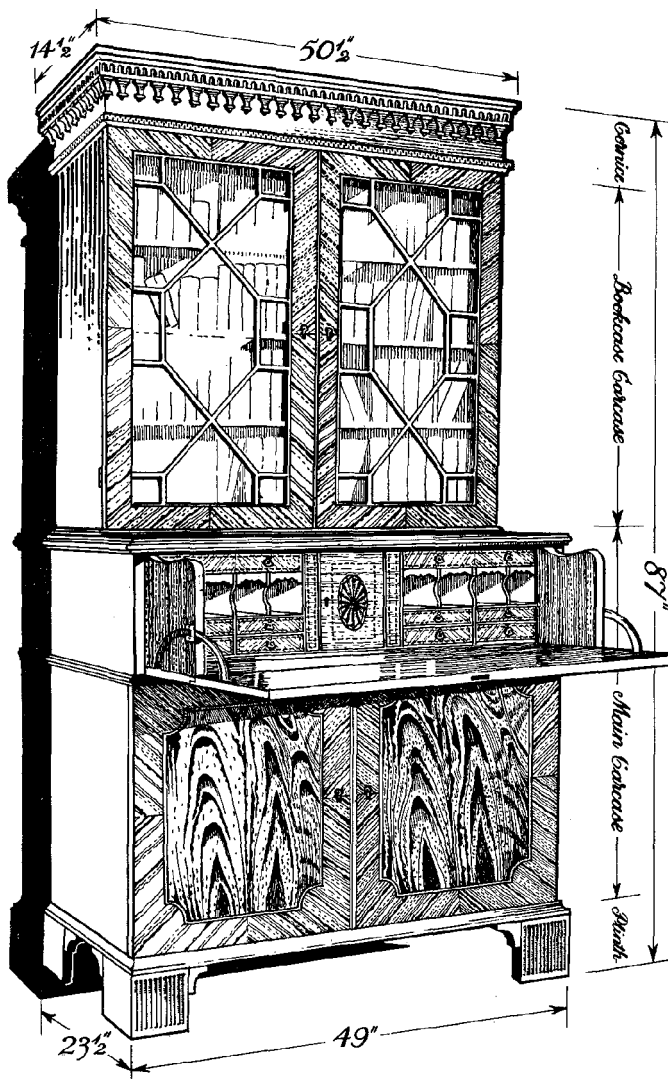


Figure 1: Plinth. The basic members of this subassembly are the four corner posts (1), which are connected at the front and back by rails (2 & 3), and at each end by a rail (4). The cupboard rests on this base and is almost certainly keyed to it with blocks screwed beneath the cupboard bottom (5), though I couldn't see them.

The feet (8) are not weight-bearing, but are merely glued as decoration around the corner posts. The ear pieces (9) are glued and doweled to the feet, then the moldings (10) are pinned and glued on. Brackets are glued and screwed into each corner to strengthen the whole framework. Screws (hand-made) were first introduced in the late 17th century and by 1720 were common. Nails and pins (brads), of course, have been used for centuries, and there is even a reference from 1343 on using an adze to smooth "old timber" full of nails. On the arris of the foot there is a staff bead, whose profile makes any opening of the joint less obvious. A central frame rail (11) is mortised flush into the front and back rails. Following the usual practice of the time, the main carcass ends (7) are lap-dovetailed to the cupboard bottom (5). There is a filler strip (6) beneath the cupboard doors, and this is shown in section at A.

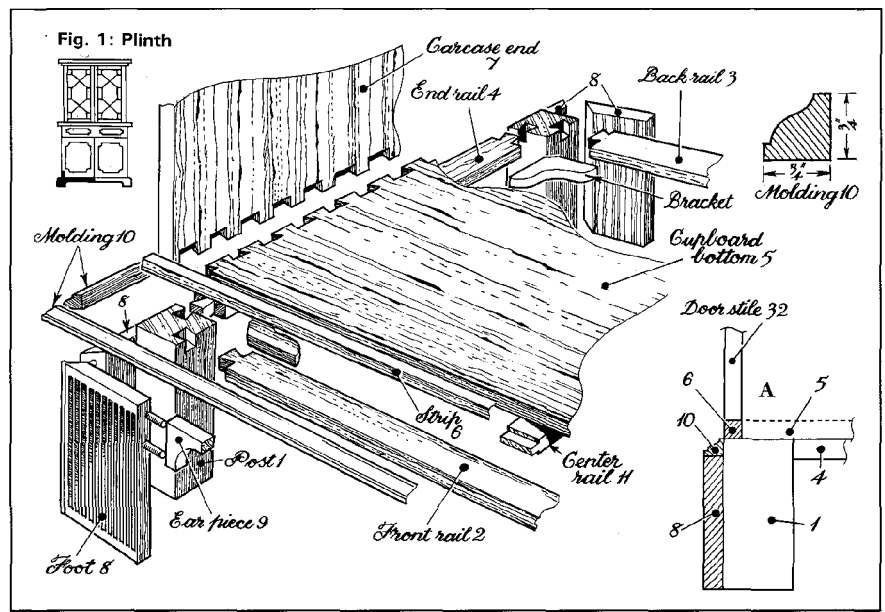


Figure 2: Cupboard and drawer framing. The doors overlap the upright ends of the carcass, therefore the carcass ends have to be stepped back by $\frac{1}{2}$ in. below the point where the front secretaire separation rail (15) meets them.

The front and back drawer rails (12) are tenoned into the main carcass ends (7), as are the top separation rails 15 and 38 (visible in figure 4, overleaf). Muntins (14), drawer bearers (13) and a central bearer (16) connect these four rails. The two upper drawers are supported by this conventional framing, while the lower single drawers run on bearers (30) glued to the cabinet ends. This ignores wood movement, but the bearers are still secure. The drawer construction is orthodox, with lapped dovetails on the fronts and through dovetails on the backs. The bottoms are solid wood, grooved into the sides and fronts without being glued in, so that they can expand and contract. You could, of course, use plywood for the bottoms instead. The handles on the drawers are solid brass and match those on the fall front; they are shown at A in figure 10.

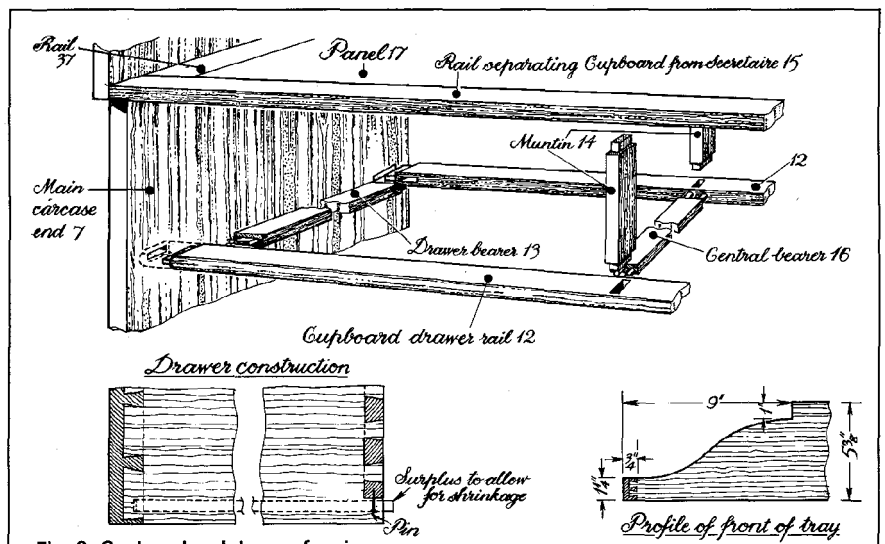
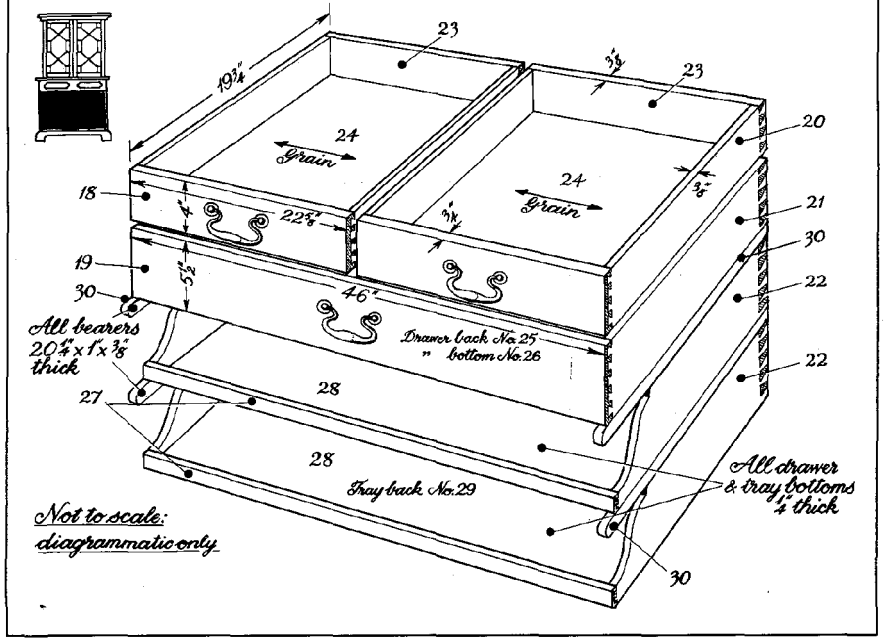


Fig. 2: Cupboard and drawer framing



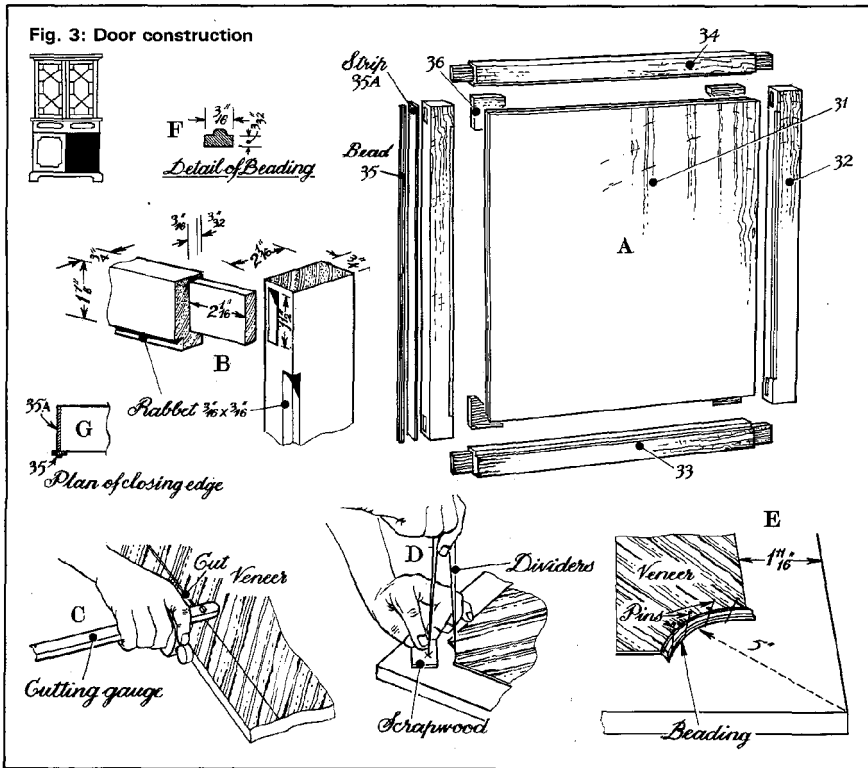


Figure 3: Door construction. The doors are hung by pairs of brass hinges. As you can see at *A*, the frame is a straightforward mortise-and-tenon job with a rabbet for the panel, which lies flush, glued and pinned. The rabbets on the rail run the full shoulder length, while those on the stiles are stopped, as at *B*. The tenons on rails 33 and 34 go right through the stiles, and their ends can be seen on the outside edges. On the closing edges, however, a thin strip (35A) has been glued to the edge to mask them. Blind tenons would do just as well here, and the cover strips could thus be omitted. A thin astragal beading (35) is fixed as shown at *G*.

The corner brackets (36) appear to have been glued behind the panel merely to add rigidity.

The doors were constructed entirely of oak, with no veneer on the inside. At the time the piece was made, veneers were sawn and consequently were much thicker than our present-day veneers. The central part of the veneered panel would have been laid in a press, while a veneering hammer would have been employed to put down the border. Workmen trimmed the edges of the veneer, after laying, with a cutting gauge (*C*), simply a marking gauge with a small, sharp blade instead of the usual marking pin. A pair of dividers, with one point sharpened, was used to scribe the corners, as at *D*, and the cut was finished off with a knife.

Detail *E* shows the small ovolo beading being glued—almost certainly, it was steamed first. Both this and beading (35) are a blond color and could be birch, sycamore or holly. The left-hand door has brass bolts top and bottom, and a false escutcheon that matches the lock on the other door.

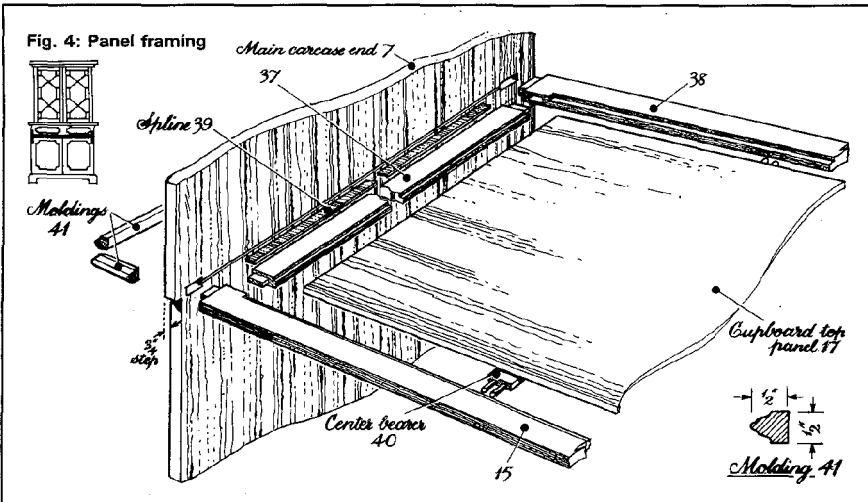


Figure 4: Panel framing. This panel (17) appears to be $\frac{3}{8}$ -in. thick pine, but I'd suggest birch plywood instead. It is pinned and glued into $\frac{3}{8}$ -in. by $\frac{3}{8}$ -in. rabbets worked on the edges of rails 15, 37 and 38. Although the frame lines up at the front with the front edge of the carcass end (7), it falls $\frac{3}{4}$ in. short of the back edge, to leave room for the back framing. The moldings (41) are glued and pinned on, corners mitered.

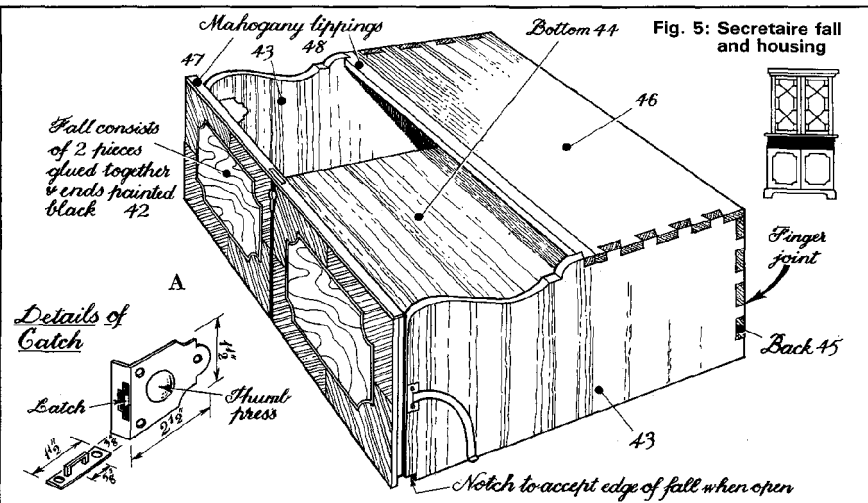


Figure 5: Secretaire fall and housing. The pigeon-hole section has a clever feature that I have not seen on other pieces from this period. It is contained

within a fall-front drawer, shown at right and at the bottom of the previous page, that pulls out to provide knee room for writing. The fall front (42) is made up of two pieces face-glued together to form a lip that fits into a notch cut into the side (43) when the fall is down (see B and D). The fall has three hinges, and is fitted with two brass handles, shown at A in figure 10. Two mahogany lippings (47 & 48) mask the drawer front's top edge and the exposed pine edge of the drawer top.

The quadrant stay was made from solid brass, with a small fixing flange brazed on. Cut out a $\frac{3}{16}$ -in. channel in the drawer side for the stay to run in. You might wish to install a lock in the fall front and catches fitted into the sides (see A and B).

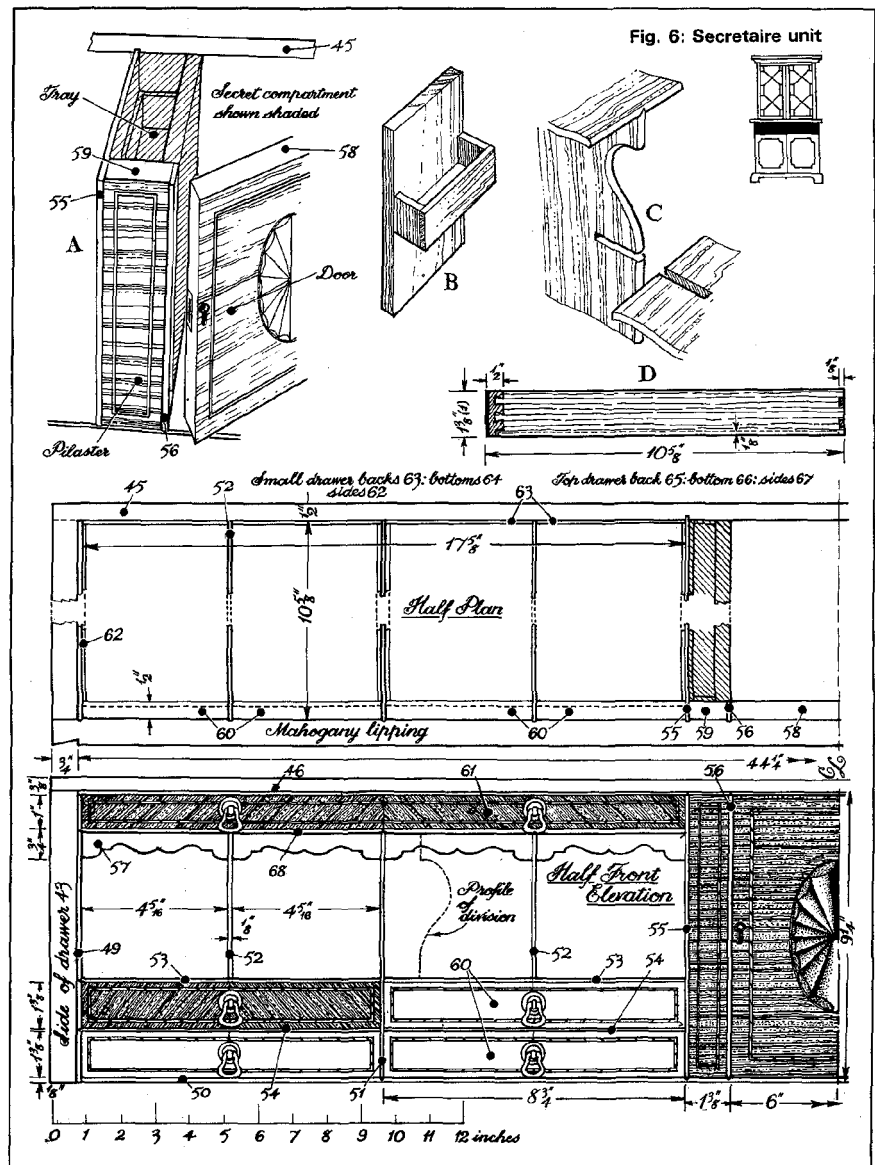
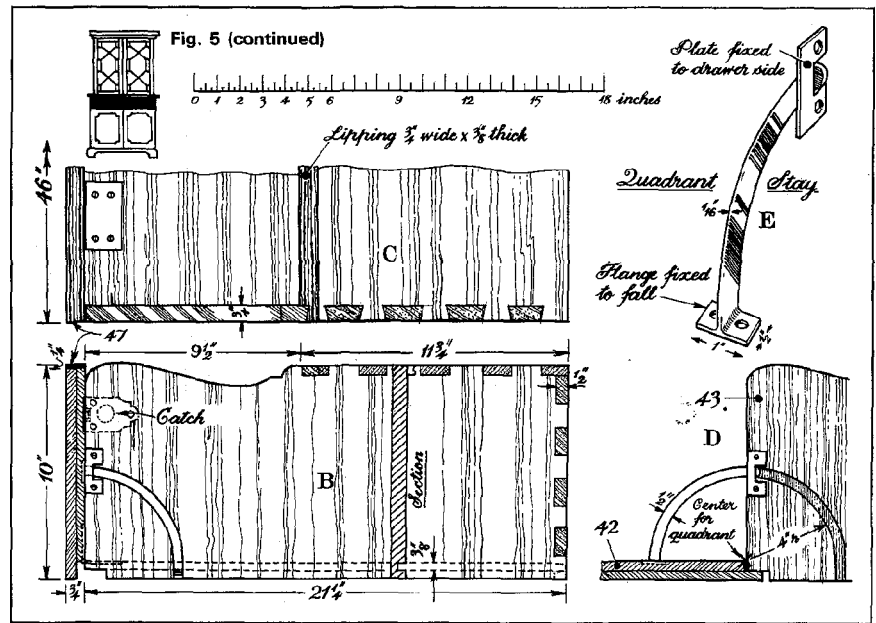
The fall front is veneered similarly to the cupboard doors, with the addition of a black inlaid line running from top to bottom in the center. Lippings are applied after veneering so that the top edge of the veneer is protected. The ends of the fall are painted black—not an attractive feature—and you may wish to substitute another thin lipping.

Figure 6: Secretaire unit. This is a real work of art, as all the parts are only $\frac{1}{8}$ in. thick, except for the drawer fronts, which are $\frac{1}{2}$ in. thick (including the veneer). All parts are mahogany. With such thin partitions, a practical joint is the interlocking joint shown at C.

The main structure comprises the bottom (50) and the two ends (49), which can be butted together and glued to the "drawer" side and bottom (43 & 44). The remaining partitions (51, 52, 53, 54, 55 & 68) can be connected with interlocking joints. Construction of the drawers is shown at D.

The veneer is enlivened by black and white stringing about $\frac{3}{32}$ in. wide, and the cupboard door is further embellished with an inlaid fan.

Now we come to an intriguing item: the secret compartments (B). Frankly, they are rather obvious and clumsy compared to some I have seen, and you may wish to elaborate upon them. They are built in behind the two pilasters (see A). Once you have opened the door, the two inner walls can be pulled inward and taken out completely. I had to pry them out with the point of a penknife, but probably a leaf spring had originally been fitted behind the tray to help push it out.



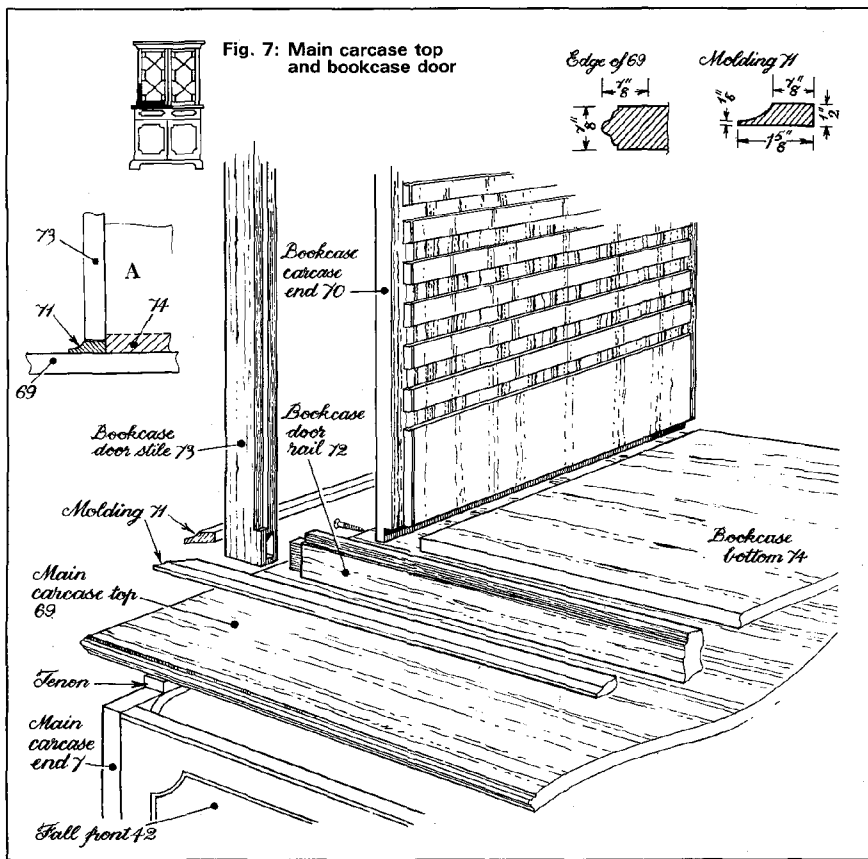


Figure 7: Main carcass top and bookcase door. The top of the main carcass (69) is fixed to the carcass ends by means of blind tenons on the main carcass end (7). Moldings (71) are attached to the top (shown in section at A) so that the removable bookcase section does not shift. The bookcase is made up of the two ends (70), the bottom (74), and the top. The ends extend up to include the cornice, and we shall be dealing with the upper part, including the top (76), in figure 9.

The bottom (74) is housed in a rabbet formed at the foot of the end. The joint is glued and then strengthened with wood screws driven in from the outside—the surrounding molding (71) will conceal the screw heads. The shelf supports (70A) are glued and pinned to the carcass end—the surrounding molding (71) will conceal the screw heads. The shelf supports (70A) are made from a piece of $\frac{5}{16}$ in. stock which first has a small thumb molding worked on its front edge, and is then sawn into separate strips. Note that their back ends must stand $\frac{3}{4}$ in. away from the rear edge of the bookcase end to allow for the fitting of the back frame.

On the actual piece, the corners of the bookcase doors have through tenons, but I have drawn blind tenons, on the assumption that you will prefer them.

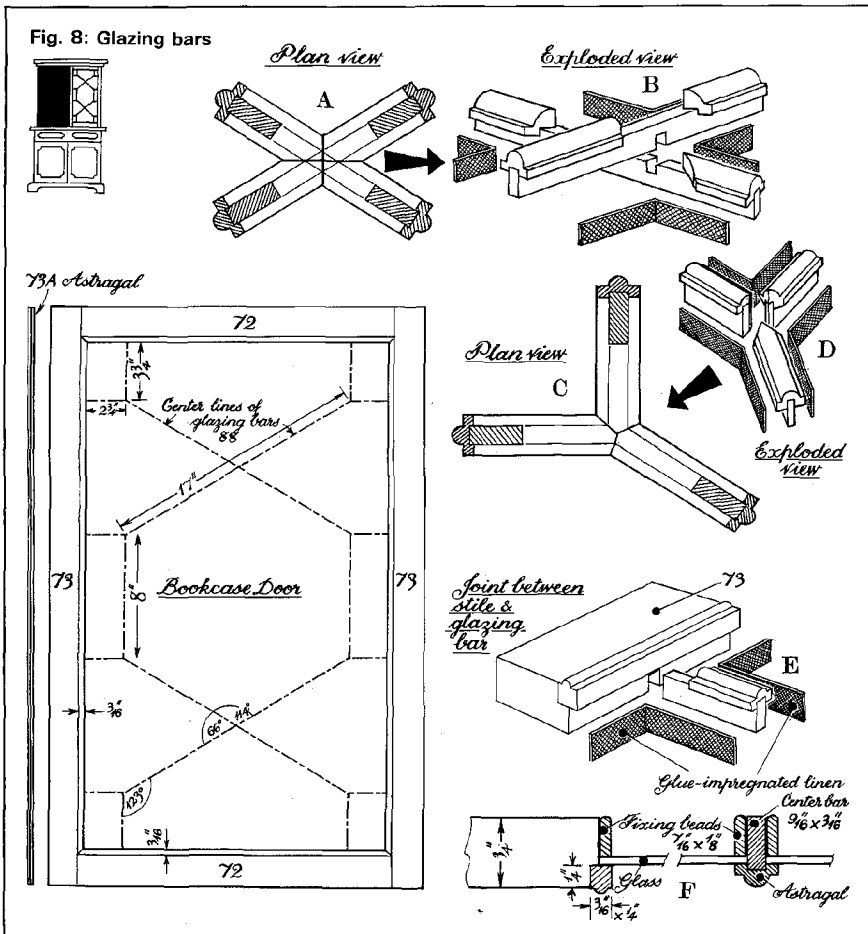


Figure 8: Glazing bars. Once the bookcase door frames are made, lay them on a flat board so that you can pencil the centerlines for the glazing bars on it, following the pattern and measurements shown. Leave off the astragal headings until you have gotten the center bars fitted. Delicate joints such as these (A—E) can be reinforced with strips of linen soaked in glue.

In the original piece, the glass is fixed in place with putty instead of the fixing beads shown at F. I cannot recommend putty, as it has no resiliency, and consequently the glass will crack easily if the wood swells or shrinks—in fact, several of the panes have done so.

The last step is to hang the doors with three 2-in. hinges per door, and if you wish, you can fix a closing bead on to the right-hand door to match the one on the cupboard door. Door stops can be fitted beneath the top, where they will be out of the way.

As with the cupboard doors, the right-hand door has a lock and an escutcheon, while the left-hand door has just an escutcheon plus a brass bolt at top and bottom.

Figure 9: The cornice and top. The cornice (75) consists of a piece of mahogany lap-mitered to the top of the bookcase end (70). It is rabbeted along its lower edge to house the bookcase top. Note the dado for the top in the bookcase end, as shown at A.

The carcase top (77) laps over the back framing (shown in figure 10), and it also laps over the bookcase ends (70) and the cornice (75). In the original, it is screwed down all around, which does not allow for wood movement.

The piece will look best if you reproduce the original moldings instead of substituting lumberyard patterns.

The top molding (78) is quite straightforward, but the one below it (79), which comprises the dentil motif with a cavetto beneath it, is not so easy. Probably the best way to tackle it is to run off the outline profile first on a spindle shaper, and then use a router to take out the slots for the dentils. Then you will need to chop out the rounded end of each slot with a small scribing (in-cannel) gouge.

Now for the bracket molding (80). On many designs of the period this was a straight run of molding with the brackets joined together at the top. In our model, however, they will need to be sawn out separately with a fretsaw or jigsaw, and the small pieces of beading glued on beneath them. These small pieces were turned on a lathe as "split" turnings—two small blocks were glued together with a sheet of paper between them and then turned; it was easy to split them apart afterward.

Lastly, we have to deal with the Grecian key motif (81), and the best way, again, is to use a router, squaring up with a chisel.

Once the brackets are glued on, it will be difficult to polish into all the nooks and crannies, so you can adopt the method employed by the old-timers. First they would have polished the cornice and the brackets as separate pieces, then they would lay the brackets on the cornice to scribe around them. When they removed the brackets, an outline was left and the polish was scraped away from this. Next they warmed up a metal plate (called a sticking board), so that the glue would not chill when it was spread on it. They would draw the backs of the brackets lightly across the sticking board so that each received a thin coat of glue, enabling them to be fixed with no fear of gummy crevices.

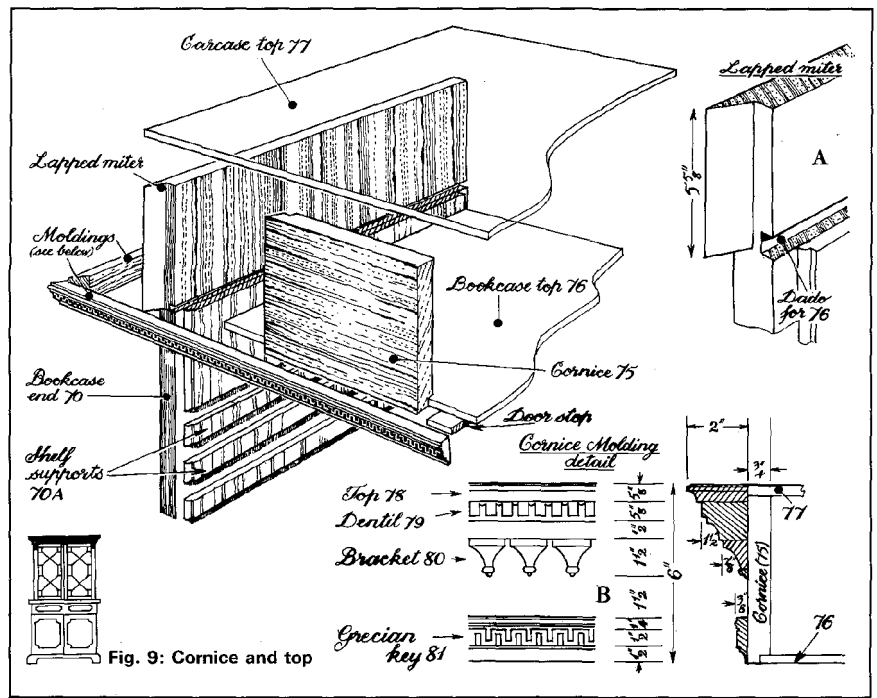


Fig. 9: Cornice and top

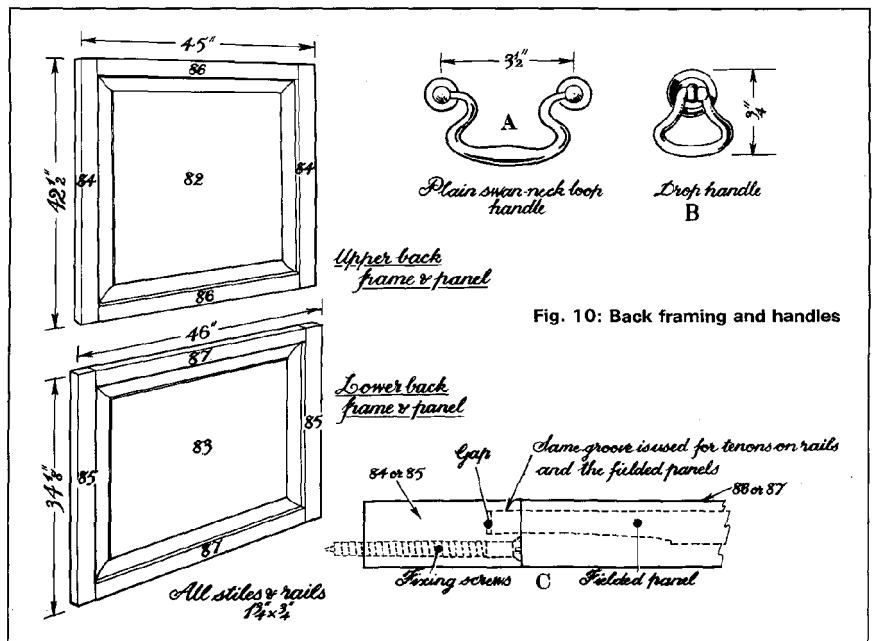


Fig. 10: Back framing and handles

Figure 10: Back framing and handles. Chances are that the framed panels in this piece were screwed into place, not glued. This would have allowed their removal, considerably lightening the piece if it had to be moved. It was difficult to see how the back frame was constructed, so I am giving details of typical framings that you can use. Those on the original were of solid oak, although you may wish to use pine. In any case, the frames are made up with conventional mortise and tenon joints. The filed panels (82 & 83) are

grooved in all around as shown at C—bear in mind that solid panels must not be pinned or glued in place but left loose to shrink or swell—leave some space, too, in the groove.

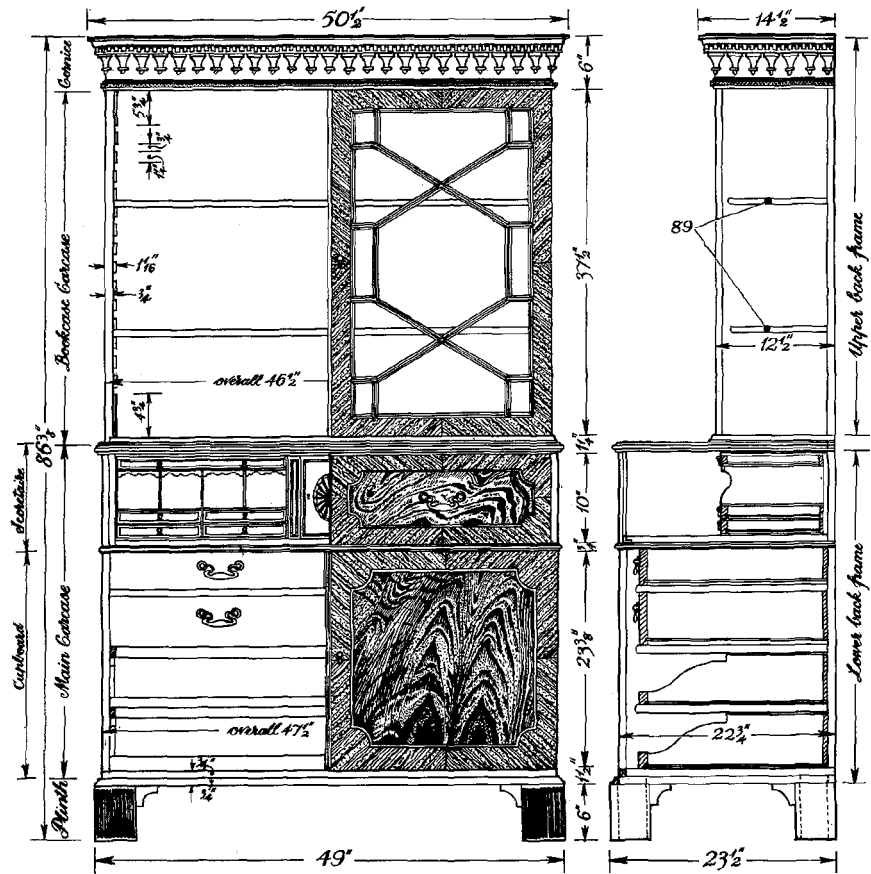
If you make the groove $\frac{1}{4}$ in. wide by $\frac{3}{8}$ in. deep, you can then use it to accept the tenons as well as the panels. You may stop the grooves on the stiles (84 & 85) to avoid their running through the top and bottom edges when the frame is made up, although when everything is in its place, finally, these edges won't show. ▀

Bill of Materials

The dimensions given below are net, and you should allow extra for sawing, planing, etc., at the rate of about 1 in. in length, 1/4 in. to 1/2 in. in width, and 1/8 in. in thickness. Where I have shown shoulder lengths you will need to add extra length for tenons. I have left the tenon dimensions mostly up to you, and you may, of course, use whatever joinery you prefer throughout the piece.

I have not included parts for the secret compartments, as no doubt you will wish to design more ingenious (and less publicized) ones of your own.

In measuring a complicated piece like this, one often finds that many of the parts were scribed from other parts or cut to fit, rather than laid out with a ruler. I found I had to adapt some of the measurements in order to get things to add up. Although I have made every effort to ensure accuracy, parts of the cabinet were inaccessible—cooperative as the folks at Georgian House were, no one was about to let me move it, let alone take it apart. I suggest that you temper haste with a bit of caution, and cut to fit as you go along. □



Part No.	Amt. Req.	Description	L	W	T	Part No.	Amt. Req.	Description	L	W	T
1	1	Posts	6 3/4	3	3	46	1	Drawer top	46	11	3/8
2	1	Front rail, shoulder length	41 1/2	1 7/8	3/4	47	1	Fall-front lipping	46	3/4	3/4
3	1	Back rail, shoulder length	41 1/2	1 7/8	3/4	48	1	Top front lipping	46	3/4	3/4
4	1	End rails, shoulder length	16	1 7/8	3/4	49	1	Secretaire ends	8 7/8	10 3/8	1/8
5	1	Cupboard bottom, shoulder length	46	22 3/4	3/4	50	1	Secretaire bottom	44 1/2	10 3/8	1/8
6	1	Strip	47 1/2	3/4	3/4	51	1	Secretaire partitions, long	7 5/8	10 3/8	1/8
7	1	Carcass ends, shoulder length	34 3/8	22 3/4	3/4	52	1	Secretaire partitions, short	4 1/2	10 3/8	1/8
8	1	Plinth feet	6	4 1/2	3/4	53	1	Secretaire partitions	17 7/8	10 3/8	1/8
9	1	Ear pieces	2	2	3/4	54	1	Secretaire partitions	17 7/8	10 3/8	1/8
10	1	Moldings from one piece	96	3/4	3/4	55	1	Secretaire pilaster sides	8 3/4	10 3/8	1/8
11	1	Center rail, shoulder length	18 3/4	1 7/8	3/4	56	1	Secretaire pilaster sides	8 3/4	1 1/2	1/8
12	1	Cupboard drawer rail, shoulder length	46	1 7/8	3/4	57	1	Arcade fronts	47 1/8	3/4	1/8
13	1	Drawer bearers, shoulder length	16 1/2	1 7/8	3/4	58	1	Secretaire cupboard door	8 5/8	6	1/2
14	1	Muntin, shoulder length	4	1 7/8	3/4	59	1	Secretaire pilaster fronts	8 5/8	1 1/2	1/8
15	1	Separation rail, shoulder length	46	1 7/8	3/4	60	1	Secretaire small drawer fronts	8 3/4	1 3/8	1/2
16	1	Central bearer	16 1/2	1 7/8	3/4	61	1	Secretaire long drawer fronts	17 5/8	1	1/2
17	1	Panel	42 3/4	18 3/4	3/8	62	16	Secretaire small drawer sides	10 1/4	1 3/8	1/8
18	1	Upper drawer fronts	22 5/8	4	3/4	63	1	Secretaire small drawer backs	8 3/4	1 3/8	1/8
19	1	Lower drawer front	46	5 1/2	3/4	64	1	Secretaire small drawer bottoms	10 3/16	8 1/2	1/8
20	1	Drawer sides	19 1/2	4	3/4	65	1	Secretaire long drawer backs	17 5/8	1	1/8
21	1	Drawer sides	19 1/2	5 1/2	3/8	66	1	Secretaire long drawer bottoms	17 1/2	10 3/16	1/8
22	1	Tray sides	19 1/2	5 3/8	3/8	67	1	Secretaire long drawer sides	10 1/4	1	1/8
23	1	Drawer backs	22 5/8	3 1/2	3/8	68	1	Secretaire partitions	17 3/8	10 5/8	1/8
24	1	Drawer bottoms	22 1/4	19 1/2	1/4	69	1	Main carcass top	48 3/8	23 1/4	3/4
25	1	Drawer back	46	5	3/8	70	1	Bookcase carcass ends	43 5/8	11 1/4	3/4
26	1	Drawer bottom	45 5/8	19 1/2	1/4	70A	-	Shelf supports from one piece	28	10 1/2	5/16
27	1	Tray fronts	46	1 1/4	3/4	71	1	Moldings from one piece	77	1 5/8	3/8
28	1	Tray bottoms	45 5/8	19 1/2	1/4	72	1	Bookcase door rails, shoulder length	19 3/2	1 7/8	3/4
29	1	Tray backs	46	4 3/8	3/8	73	1	Bookcase door stiles	37 1/2	1 7/8	3/4
30	1	Bearers	20 1/4	1	3/8	73A	1	Bookcase door closing bead (astragal)	37 1/2	3/16	3/32
31	1	Door panels	19 15/16	19 1/2	1/4	74	1	Bookcase bottom	45 3/4	11 3/4	3/4
32	1	Stiles	23 1/4	2 1/16	3/8	75	1	Cornice	46 1/2	5 5/8	3/4
33	1	Door bottom rails, shoulder length	19 5/8	2 1/16	3/4	76	1	Bookcase top	45 3/4	11 3/8	3/8
34	1	Door top rails, shoulder length	19 5/8	2 1/16	3/4	77	1	Bookcase carcass top	46 1/2	12 1/2	3/8
35	1	Closing bead	23 1/4	3/16	3/32	78	1	Top moldings from one piece	79 1/2	2	5/8
35A	1	Strips	23 3/4	3/4	1/16	79	1	Dentil moldings from one piece	77 1/2	1 1/2	1 1/2
36	1	Corner pieces	2	2	3/8	80	1	Bracket moldings from one piece	75	1 1/2	1/2
37	1	End rails, shoulder length	18 3/4	1 7/8	3/4	81	1	Grecian key moldings from one piece	77	1 3/4	3/8
38	1	Back separation rail, shoulder length	46	1 7/8	3/4	82	1	Upper back panel	39 5/8	42 1/8	3/8
39	1	Splines	18	3/4	5/16	83	1	Lower back panel	31 1/8	43 3/8	3/8
40	1	Center bearer	18 3/4	1 7/8	3/16	84	1	Upper back stiles	42 1/2	1 3/4	3/8
41	1	Moldings from one piece	96	3/4	3/8	85	1	Lower back stiles	34 1/8	1 3/4	3/4
42	1	Fall-front pieces	46	9 3/4	3/4	86	1	Upper back rails, shoulder length	41 1/2	1 3/4	3/4
43	1	Drawer sides	21 1/4	10	3/4	87	1	Lower back rails, shoulder length	42 1/2	1 3/4	3/4
44	1	Drawer bottom	45 1/4	21 1/16	3/4	88	-	Glazing moldings, from total run of	242		
45	1	Drawer back	46	10	3/4	89	-	Shelves (number optional), each	44 3/8	10 1/4	7/8

SEE ERRATA AT END OF ARTICLE

ERRATA

I know that publishing a magazine of the scope and detail of *Fine Woodworking* is no easy task. Nonetheless, whoever proof-read the bill of materials on p. 60 of your January 1983 issue, #38, was sleepy indeed. If only one of each part (save for 16 drawer sides) is required, then I want to be there to witness the assembly of the finished secretaire-bookcase! I am sure that the requisite number of parts can be puzzled out; even so, I hope you will publish a corrected list.

—*Abram Loft, Rochester, N.Y.*

EDITOR'S NOTE: Ouch, we goofed. Secretaire builders will need only one of some parts. For the rest of them, here is a list of part numbers followed by the correct number of pieces:

1-4; 4-2; 7-2; 8-8; 9-8; 10-3; 13-2; 14-2; 18-2; 20-4; 21-2; 22-4; 23-2; 24-2; 27-2; 28-2; 29-2; 30-4; 31-2; 32-4; 33-2; 34-2; 35A-2; 36-8; 37-2; 39-2; 41-3; 42-2; 43-2; 49-2; 51-2; 52-4; 53-2; 54-2; 55-2; 56-2; 57-8; 59-2; 60-8; 61-2; 62-16; 63-8; 64-8; 65-2; 66-2; 67-4; 68-2; 70-2; 71-3; 72-4; 73-4; 78-3; 79-3; 80-3; 81-3; 84-2; 85-2; 86-2; 87-2. If you'd rather have a new p. 60, drop us a note and we'll mail it to you.