

Hand Mirror

Introduction

Although rewarding, a hand mirror is not a very difficult item to make. It should be within the scope of those turners with intermediate skills who have mastered the basic principles of spindle turning and obtained a reasonable amount of confidence with a bowl gouge.

The piece is made from four parts: the head, the handle, a small piece of dowel to join them together, and the mirror. (See figure 1.)



Figure 1: Parts of the mirror

The design

A hand mirror should not be too heavy or unwieldy so the parts should not be made any larger than necessary. The general features of the suggested design are set out in accompanying diagram (see Annex 1). There must be many possible variations on this theme. The simple design illustrated has proved to be attractive, judging by the comments I have heard, and the fact that people are willing to buy it. One aspect of the design is determined by the method I use to drill the hole for the dowel in the head. The bead on the back provides a bearing surface which facilitates clamping the piece vertically on to a jig (to be described below).

The dimensions shown are for a mirror with a 5in. glass. If the maker wishes to use a bigger mirror glass, say 6in diameter, then some of the dimensions will have to be scaled up. For the 5in mirror the blank for the head needs to be a little over 6 3/4in by 1in. The handle should be about 6in by 1in.

The wood

I have used ash for my mirrors; it turns nicely and it looks attractive. Whatever species is used, the blank for the head must be chosen with care. The mirror glass is thin, fragile and inflexible. The possibility of movement of the wood after the piece is finished must be reduced to the minimum. Because of this, the blank should be quarter sawn, that is to say, when the end grain of a square blank is examined the annual rings should run more or less vertical to the major faces. If you have a piece of wood in which there is any sign of cupping I would strongly advise you to reject it for this purpose.

The blank must also be sufficiently dry. In technical terms this means that the moisture content must be in equilibrium with that of air in a centrally heated room in the winter. 'Air dried' timber (which has been dried outdoors) will be too wet for this purpose and will need to be dried further. Kiln dried timber will be fine as long as it has not been too long since it came out of the kiln. Remember that as soon as wood

comes out of the kiln it starts to pick up moisture. If it has been left in a shed, or a similar damp place, for a few months it may well have become too wet. (See also "How dry is my wood".)

If you have any fears that your wood may not be dry enough the safest thing to do, is to keep a some blanks in a warm room in the house, or in the airing cupboard, for a few weeks. Clearly, for this job, some forward planning is required.

Holding the work

We need to consider the question of how the work will be held on the lathe. There are no problems with the handle but we do have to think about the head. I glue a piece of waste wood onto the back of the blank for the head and then mount it on a screw chuck. The front face of the head is then turned.

Having done that we need some way of holding it so that the back can be turned. What I do is to turn a secondary recess for the expanding jaws of a proprietary chuck in the middle of the recess which has been made for the mirror. This will, of course, be covered by the glass. If the second recess is not made more than 3 in. in diameter the gluing surface for the glass will be adequate.

Turning

When starting to turn the front of the head, it is usually a good idea to clean up the face, and the edge, with a bowl gouge. After this the recess for the mirror is cut. This should be deep enough to allow for the shaping of the bead and a fraction wider than the mirror (a bare 1/32in. all round) to allow for some movement of the wood. Next, the rim to the outside of the bead can be formed with a small bowl gouge followed by finishing cuts made with a scraper.

When forming the rim remember that the surface must be taken down far enough to leave an upstanding fillet for the bead. The bead is then rounded with either a small scraper or, my preference, scraped with the corner of a small skew chisel. This requires care and delicacy in swinging the handle of the tool in an arc whilst holding the cutting edge almost stationary.

Now the recess for the expanding jaws can be cut. After that the front face can be sanded, sealed and polished using the turner's preferred method.

The work-piece is then reversed onto the expanding jaws and the back is shaped. This is done mostly with a bowl gouge but the surface adjacent to the bead will have to be cut down with a small scraper. The bead is rounded in the same way as the one on the front. The edge of the work-piece, which is trued up with a small bowl gouge, should end up 3/8in. wide. Finally the edge and the back are sanded and finished.

The turning of the handle presents no special problems. For those still uncomfortable with the skew chisel most of the shaping can be accomplished with a spindle gouge. The small details at the end can be done with a 3/8in. square beading and parting tool.

When finishing the handle particular care needs to be taken to ensure that it is well sealed. If this is not done it may start to look dirty with use.

Drilling and assembly

When shaping the back make sure that the bead stands proud of the general surface. This will facilitate clamping of the mirror head to the jig for drilling the hole for attaching the handle. This jig is a very simple device; it is merely a flat piece of wood screwed or glued to a block. The block should be big enough to provide a degree of stability but not so high that it prevents the fixing of the clamp. (See Figure2)

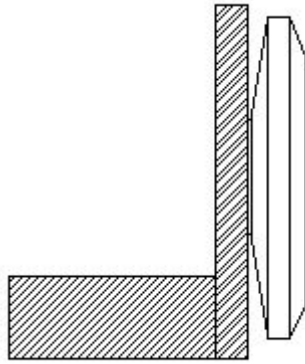


Figure 2: section through simple jig for drilling mirror head

This shows the position of piece. The clamp is not shown

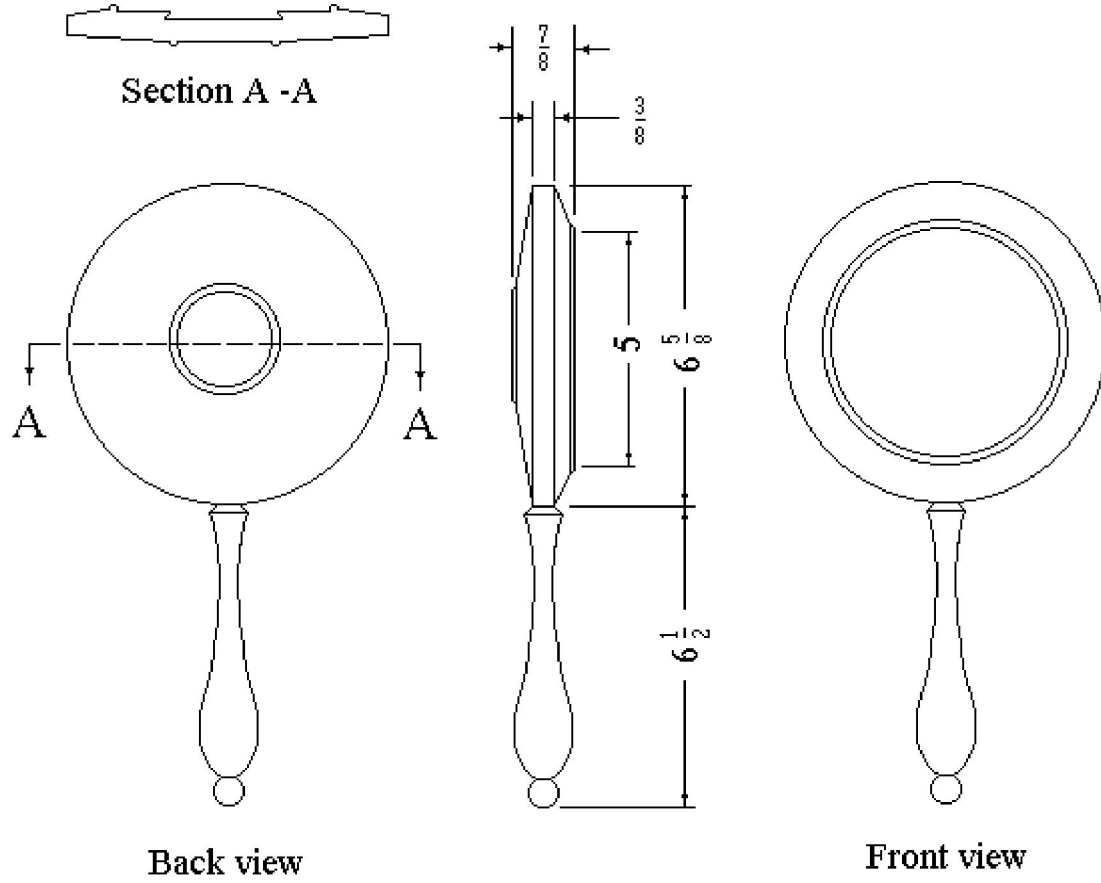
To ensure that the hole is pointing directly through the centre of the work-piece draw a line on the surface which will be hidden by the mirror. This line should pass through the centre of the work-piece and, if projected, through the entry point of the drill. This is accomplished quite easily simply by lying a ruler across the piece and lining it up by eye.

When the head is clamped to the jig (with a large G clamp) this line is made square to the base with the aid of a small try square. The whole assembly (jig, work-piece and clamp) is then clamped to the drill table. If a pedestal drill is not available a couple of assistants will be required to help to see that the hand drill is held vertical. The hole is drilled to provide a nice fit on a piece of 1/4in. dowel.

Possibly, the most tricky job on the handle is ensuring that the hole for the dowel is drilled in line with the axis of the piece. If a drill press is used, mark the spot on the table vertically below the point of the drill, then place the bottom of the handle on the mark and drill as required.

Finally, the head and the handle are joined with a piece of 1/4in. dowel and PVA glue, and the mirror is stuck in place. The mirror can be attached with Clam or any other tile cement specified for use on a wood surface.

Annex 1



Dimensions in inches