



**Hawley  
Collection**  
@ Kelham Island Museum

# HOW IT WAS MADE

## Scissors

Scissors have two arms each with blades at one end and a round hole for the fingers at the other. These arms are pinned together with a screw or rivet which allows them to move and be opened and closed, sliding the blades against each other to cut. They are different from shears or spring scissors which are made from one piece of metal bent in half to make two arms, each with a blade at the end.



*Diagram of scissor parts*

The blades and bows of scissors vary enormously depending on their intended use and user. Blades can have one or both points which are: round, square, curved or pointed. Bows can be equal/unequal in size, straight or offset to one side (sidebent), higher than the blades (i.e. have a bent shank) and can be shaped and highly decorated.

‘Scissorsmyths’ or ‘Scissar makers’ and ‘shearsmiths’ were active in Sheffield from the early 1600s (see ‘Tweedale’s Directory of Sheffield Cutlery Manufacturers 1740-2010’ by G. Tweedale, 2010) and by the mid-1600s Sheffield was well known for its manufacture of steel and cutlery – table knives, trade knives, razors and scissors -

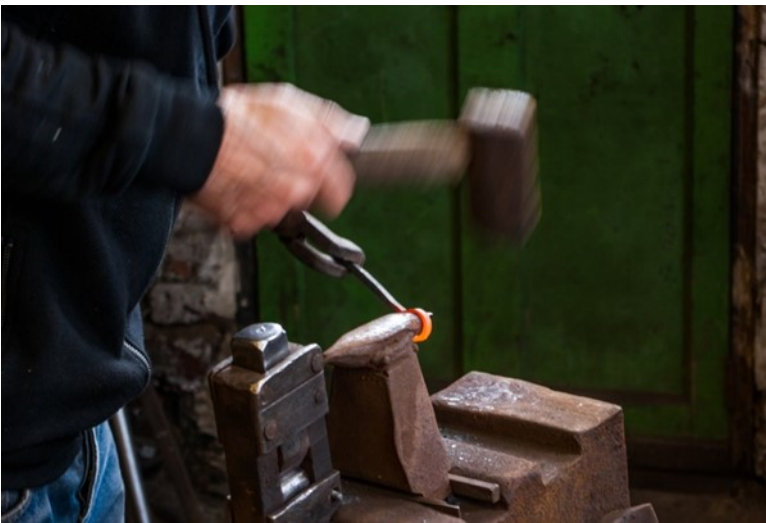


Today, as well as traditional steel scissors with painted handles, some scissors have moulded plastic handles attached onto the steel blade.

## Stages in the manufacturing process

### *Forging*

This is the initial shaping of the scissor blank. The forger started with a piece of steel (rod/bar) cut to the required length. This was heated in the forger's hearth (fire) and shaped into one half of the scissor. To shape the bow, a hole was punched in one end large enough to fit over a 'beaked' or pointed anvil and worked to give the finished shape.



*Left: Peter Goss forging scissors at Kelham Island Museum, 2016*

*Below: Number marked on 'under' – T.007290*



For the blade the other end when 'red' hot was placed in a die (mould) of the correct shape fixed in the anvil and hammered into shape.

The forger reheated the finished blanks in a coal fire to soften them – **annealing** - then matched the blanks into pairs and put them together on sticks. (Annealing at this stage in the process was only carried out on hand-forged and not machine-forged blanks.) The pairs would be numbered, i.e. marked with a hammer and punch, on the 'under'. On one half of the scissor the mark would be vertical and on the matching half horizontal. (This pairing of the scissors is known in the trade as the scissors being 'married'.)

When machines were introduced at the end of the 1800s, steel blanks were stamped out of hot metal using a drop stamp, but by the end of the Second World War, very few companies forged their own blanks, but instead bought these in from specialist firms. Today, scissor blanks are still imported from Italy, made using the hot drop forge process.



*Drop stamping at Eye Witness cutlery works, 1910 - PH.CUT.229*

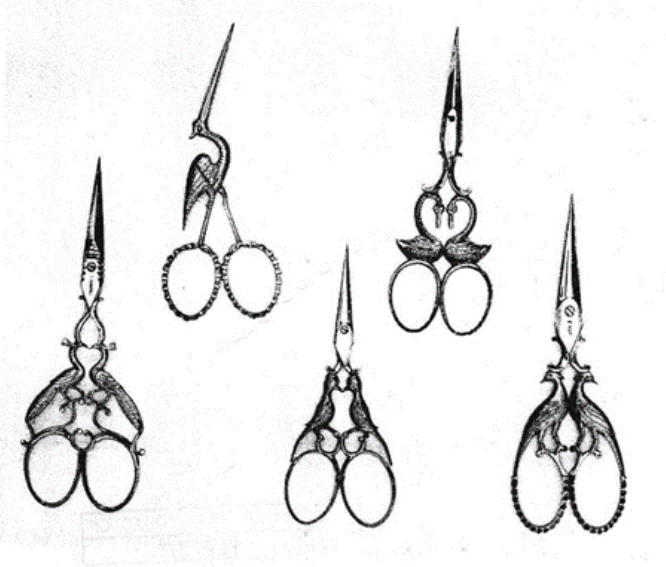
### **Boring**

This is making the hole in both halves of the scissors ready to take the screw or rivet. Originally this would have been done by hand on an anvil. Later hand, and then machine operated, bench drills with a 'cheese' or 'rose' head drill were used. The top half would have a countersunk hole, i.e. a hole with a sunken area at the top to take the head of the screw or rivet to give a flat finish. Both halves could have 'tapping' or grooves filed or bored into the hole using a bench drill, to take the screw thread.

### **Filing**

This stage only applies to hand-forged scissors. A variety of files were used to finish the shanks, make the indented area – under and ride - round the bows and make sure that each part of the pair was identical. At the same time any decoration was applied. This was a skilled task, particularly when scissors had a high level of decoration. In later years a grinding wheel was used for this process rather than a file.

*George Platts Scissor Patterns, PLA 3  
(Box ARC.86)*



**N.B. Up to the present day, the 'best' or top quality scissors are 'put together' or assembled twice – see below. Once at this stage with the screw, and the blades 'smithed' to make sure they come together, and then a second time after hardening – see Putting Together below.**

### ***Hardening and Tempering***

For most scissors, only the blade is hardened up to the nail hole, not the bows. The blades are heated on sticks until they are red hot then immediately dipped or 'quenched' in cold water or oil. The quenching makes the steel hard. To temper the hardness, the blades would then be reheated in a fire or furnace and allowed to cool slowly.

Today blades are heated to a given temperature – e.g. 850° C, carbon steel, 1050° C stainless – and left at that temperature for a 5-6 minutes to ensure that all the blade is heated or 'soaked'.

### ***Initial Grinding/Rumbling***

Today initial grinding, to remove all the rough edges, is done after hardening in a 'rumbler', a machine which contains abrasive material, e.g. ceramic chips. The blanks are rotated for ten hours and, depending on the abrasive material, weak acid may be added and, at the end of the process, polish and water. The blades are then ground on both sides by machine, moving under a grinding wheel.



*Blades being ground by machine at Ernest Wright & Son Ltd., 2016*

### ***Bow Dressing***

The bows and shanks are finished by a 'bow dresser' originally by hand using files and saliva. Later and today, the shanks and outside of the bows are dressed or filed on abrasive wheels and the inside of the bows on moving emery belts.

### ***Putting Together***

The task of the 'pudder' or 'putter' - a putter-togetherer of scissors - is to assemble the scissors and make sure that the blades come together and cut the full length of the blade - from heel to point. This entails first screwing the blades together then smithing (shaping) the cold scissors to bend the blades towards each other. The friction between the blades will then ensure even cutting along the blade. This is one of the most important stages of manufacture and requires a great level of skill learnt over a 5-7 year period.

The 'putter' uses a shaped piece of metal - a brake - attached to his bench to shape the bows, and an anvil, metal ring and hammers to bend the blades slightly from back to front. A setting hammer is used to correct and adjust this until there is an equal gap all the way along between the blades and they come together easily along the length of the blade to cut.

When the blades are set correctly, the screw is finished, e.g. the head and tail shaped into a dome using a file or dome punch and a pattern applied if required - see screw making below. Today most screws are cut and then tapped with a hammer to 'rivet them over' or spread the metal to seal the screw in the hole. Some machine-made scissors today have the blades joined with a rivet rather than a screw.



*Putter's anvil and hammers at Ernest Wright and Son Ltd., 2016*

### **Finishing**

The scissors were finished by being ground lightly on a rotating wooden wheel coated with lead and an emery coated wheel then glazed on a leather coated wheel to a dull finish. The final polish was carried out on a further leather wheel with crocus powder added to it and then on rotating cloth wheels or 'dollies'. The blade edge would then be 'set' or sharpened on a fine grindstone or an oil stone.

Today on hand finished scissors the final polish is achieved using commercial polish on felt wheels.

The bows/handles may then have further finishes applied, e.g. plating, paint, etc.



*Kitchen scissors with painted handles –  
T.005846*

### ***Scissor Screw/Rivet Making***

Up to the mid-1900s most manufacturers would make their own screws/rivets from wrought iron or steel wire (usually 0.45% carbon) - usually the 'putter' or 'putter together'. The steel would have been annealed (softened) then blanks of the correct length would have been cut on an anvil. A file was used (and later a mechanical lathe) to shape the screw head and put in the slot.

For screws the thread was put on in earliest times using a file and later using a screw plate.



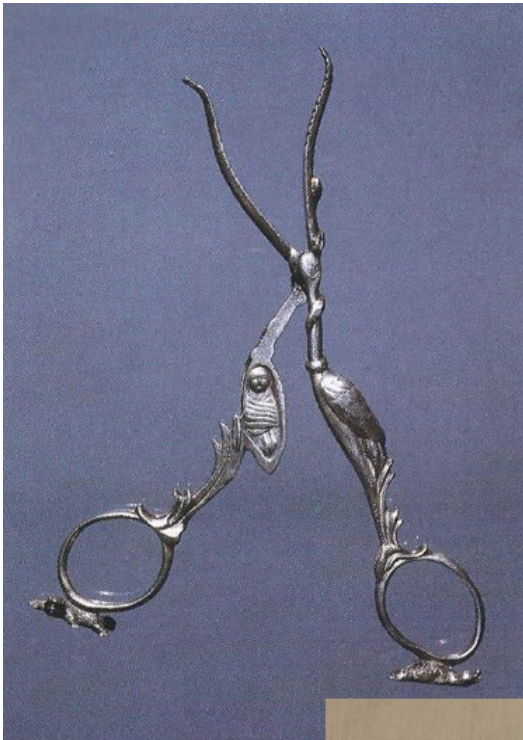
*Scissor screw maker's tools – T.006467 (screw plate top left)*

*Embroidery scissors with shell pattern screw – T.005864*



When scissors were 'put-together' twice, a screw was matched and fitted to a pair of scissor blanks, and put on a screwboard (which matched each one to its set of scissor blanks – 1-14), hardened then replaced on the board. Later each one would be taken out and the head and end polished.

The head and tail of the screws may be filed to a half round, and for best quality scissors, a shell pattern filed into the head with special files. Today, screws are bought in.



*Left: Sheffield plate scissors and pliers in the shape of a stork - Image 85, p.57 'Scissors' by Mandel, 1990*



*Right: Scissors with plated bows, silver on brass – T.008455*



*Below: Kutrite kitchen scissors, Ernest Wright & Son Ltd. – T.005846*

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If you would like more information about scissors and related items in the Hawley Collection, please contact us:

via our website: [www.hawleytoolcollection.com](http://www.hawleytoolcollection.com)

by email: [enquiries@hawleytoolcollection.com](mailto:enquiries@hawleytoolcollection.com)

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