

Overview of Processes

Processes used in coffin fitting manufacturing



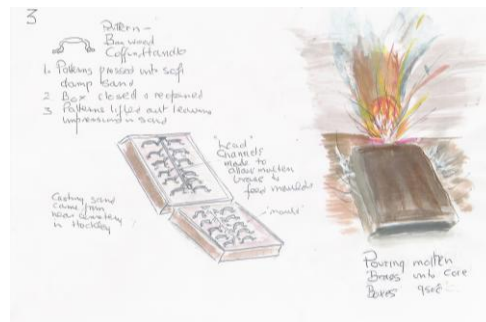
Newman Brothers made high quality coffin furniture. Here are two examples of products they made and the different metal-working processes they used.

A. This handle is: cast, plated and given an oxy-silver (or antique silver) finish.

But what processes did it go through to be made?

1. Casting

In the casting process, metals such as gold, silver, iron, copper and brass are melted at extreme temperature and poured in their fluid state into sand moulds and left to cool and set. Casting shops and foundries were once fairly common in the Jewellery Quarter, but now very few survive. Imagine the heat, the sounds and smells of the furnaces! The two parts of the handle above would be made in moulds of the same shape.



2. Cleaning

After casting the handle parts would be cleaned by being dipped in a container of noxious chemicals in the Dippy Shed. This was located in the centre of the Courtyard at the Newman's factory. The chemicals could turn your hair green!

3. Barrelling

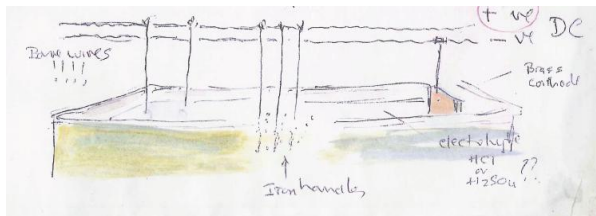
After cleaning the cast handle would then be placed with sawdust, oil, stone and leather in hexagonal barrels in the Barrelling Shop. The barrels were rotated and this process would remove the rough edges from the cast items.



4. Electroplating

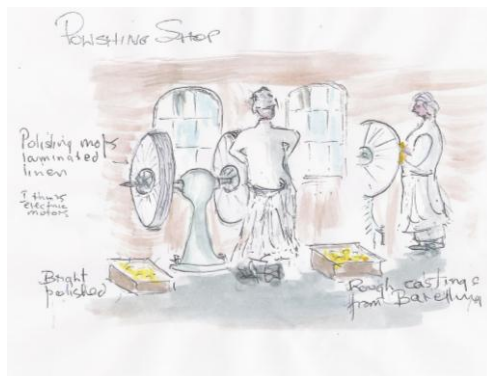
Electroplating is an electro-chemical process in which the surface of cheaper base metals such as copper and nickel is covered by a thin layer of another metal, such as gold, silver or bronze; to give it the appearance of something more expensive, for a fraction of the cost. A silver plated handle, as opposed to one cast in solid silver.

Plating shops typically contained a number of open topped tanks in which various pickling and plating solutions were kept. Metal items were first dipped into a nasty tank of chemicals called a pickling tank in order to produce a clean surface. The item was then moved to a plating vat and immersed in the plating solution of silver and a solution containing potassium cyanide. An electric current was then passed through the solution, moving the metal finish on to the surface of the item. It is a VERY dangerous process indeed!



5. Polishing

Items were polished to remove marks, finger prints and give them a shiny, clean finish ready for packaging. In the late 1900s electrical polishing 'lathes' were used for hand polishing individual pieces. A line shaft would have powered earlier machinery before electric polishing machines were used. Polishing produced noxious dust which was sucked into extractor hoods and out into a 'hopper' in the courtyard. The 'antique silver' effect was added to the handle in the polishing stage by hand. It was a highly skilled job.





B. This breast plate is made of tin and would later be engraved with the name and age of the person being buried in the coffin. It would be screwed onto the top of the coffin lid.

But what processes did it go through to be made?

1. Guillotining or cutting the sheet of tin to size

The thin sheet of metal is cut to size in a machine called a guillotine. Here is the tin before it is stamped.



2. Stamping



Stamping is carried out using a piece of machinery known as a “drop (or forge) stamp.” This machinery is still in use today within the Jewellery Quarter. A large heavy stamp would be dropped from a height onto a sheet of metal to make decorative patterns on the breast plate. The drop stamps at Newmans were powered by an electric motor which drove the line shafting above the machines. The stamps were operated from a pit dug into the floor behind them.

A rope stirrup around the operators left foot allowed control over the stamp, while the operator’s hands were busy rapidly sliding metal sheets onto the plate. The loss of a finger was not uncommon! Here is the tin with the decorative design ‘stamped’ into the metal. It is sat on the ‘Die’ (mould) which is the pattern which gives it the design.



Die sinking

Creating the mould is known as Die sinking. The Die sits at the base of the Drop (or forge) Stamper, it is made from a solid block of iron with the design of the object carefully carved out by a skilled craftsman. It is very hard work carving in iron; however this meant that the die could be used over and over again. They are so strong that many dies have survived.

The Force

The heavy weight dropped onto the metal is called the Force. The Force is made by casting; hot molten Stampers Metal is poured into the die to create an exact reverse impression to the die. When the Force is dropped onto the die the flat metal will be squashed between the die and the force to produce the design.

3. Pressing (fly-press machines)



These machines were used to clip off surplus metal around the pressings to form cleanly finished fittings. The fly presses were also used to create smaller stamped items (see the crucifix shape below).



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