Forged vs Fabricated
How to tell the difference

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Bending

Although this needs no definition, smiths use a surprisingly large number of methods of getting the bend they want, depending on the nature of the work. This process is also available to the fabricator, and is sometimes done hot.

Upsetting

Upsetting is the opposite of drawing, and involves thickening the metal by hammering it against its length. It is used most often to gain mass for rivet heads or decorative finials and to set tenons after they’ve been inserted into mortises. One more specialist use is to increase the mass at a sharp bend to make a squared corner. There is no fabricated equivalent to upsetting.

Cutting

Yes, this can be a forging process. The metal is heated and either laid on the anvil and pierced with a chisel or driven downward into a static chisel held upright in a hole in the anvil. This can be done cold for smaller sections. Usually other work is done after cutting, but in sheet metal elements, the beveled edge left by the chisel may be visible. Fabricators (and modern smiths) obviously have recourse to many different methods of cutting that would have made their ancestors green with envy!
Twisting

Again, an obvious process, there is a profound difference in the methods and results used by the two schools. Smiths may work the bar in many varieties of ways before and after twisting, and make extreme numbers of turns that vary along the bar, and may twist multiple pieces together. Cold twists are simple and without variation.

Top, simple cold twist.
Middle, progressive reverse twist, made hot.
Bottom, pineapple twist, made by twisting, hammering and untwisting, all at an incandescent heat.

Punching

Hot punching to make a hole differs dramatically from cold punching or drilling in that there is much less loss of material, and the metal displaced by the punch swells the bar on either side. This swelling is very often an obvious due to the method of manufacture.

Right, the amount of material removed by hot punching is the diameter of the punch-tip, and much shorter than the depth of the hole. Most of the material moves aside. The final diameter is determined by the punch body, or by using a separate drift.
Far right, the amount of material removed by drilling is obviously equal to the size of the hole, with a corresponding weakening of the structure.

Fire (or forge) welding:

This is a joining method, but it is also the prince of processes, in which it is possible to achieve sculptural excellence rarely rivaled by modern methods. The pieces are heated to fusion temperatures and hammered together while hot. It requires preperation, timing, skill and a clean fire. There is often no sign of the weld in the finished product other than the evidential impossibility that the shape could not have been forged in one piece. Fabricators weld by adding metal to the joint, and this is usually quite visible.
Halving is used where bars are lapped over each other, or where two pieces are joined for a run longer than the stock. These joints can be secured by rivets, which may be countersunk and difficult to see under layers of paint.

The joint above riveted. Rivets are often used where nuts and bolts would be used in modern work.

Collars are shaped sections of bar which are wrapped while hot around bundled elements.

**Other forging processes**

- Often closed dies are used under power-hammers to get consistent repeating shapes.
- Rolling is used to make bars with constant sections.
- Sheet metal is formed from the back (repoussé) or the front (chasing) using shaped punches to make ornamental elements, and this can be done either cold (usually) or hot.