

Casting Process

Process of Producing metallic parts by pouring molten metal in to a mould having a cavity of the part to be cast and then allowing the molten metal to solidify.

Mould

A mould is a cavity so prepared that it can be used to make castings by molten metal into it.

Pattern

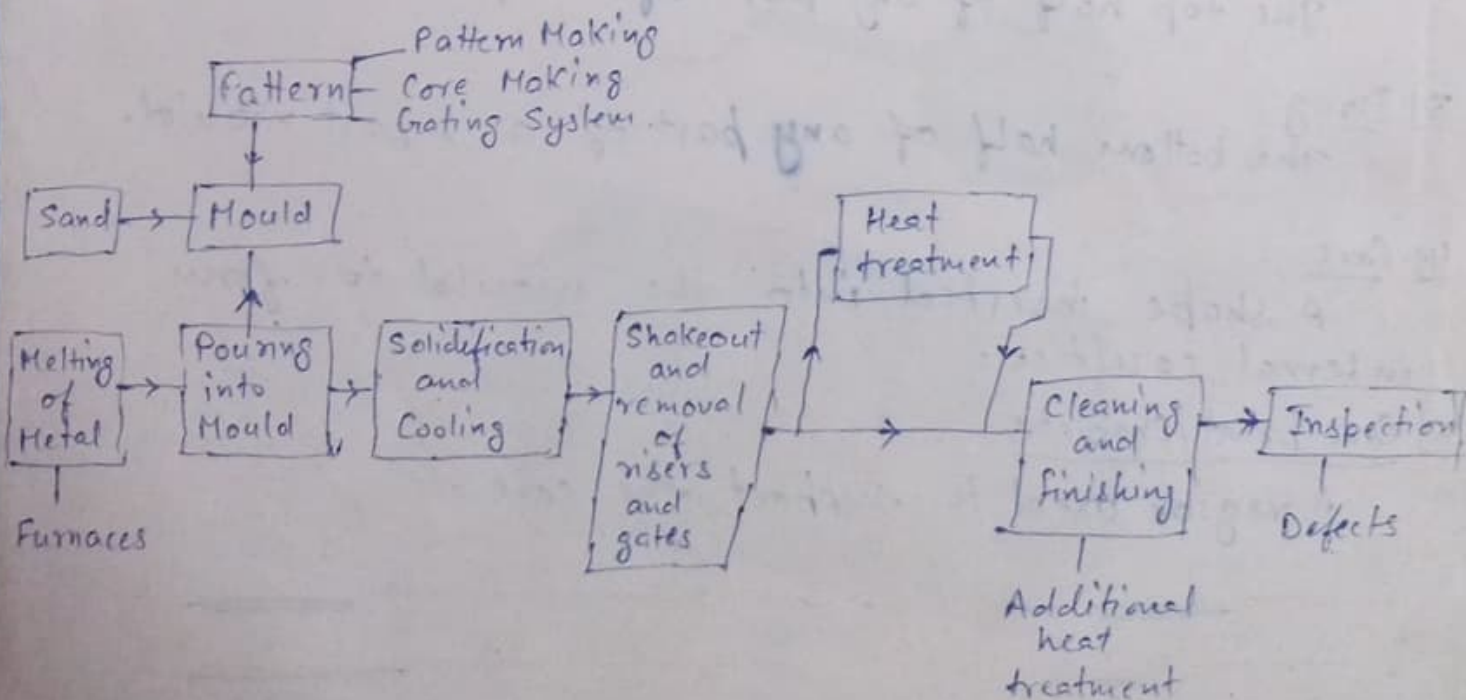
A mould or Replica of the part to be cast.

Foundry

The place where jobs are prepared by melting and pouring the molten metal into the moulds is known as foundry.

Forgability

The capacity of a metal to get forge is called forgability.



Production Steps in Sand-Casting.

Advantages

- 1) Complex shape of the object can be produced.
- 2) It is less expensive process.
- 3) Ductile and brittle material can be produced.
- 4) Large sized objects can be produced by casting only.

Disadvantages

- 1) Casting objects are not having smooth surface finish.
- 2) It is laborious & time consuming process.
- 3) There is a possibility of gas defecting in casting.
$$[2H_2O \rightarrow 2H_2 + O_2]$$
- 4) Casting objects are not having uniform mechanical properties due to non-uniform cooling.

Terminology used in Casting.

1) Flask

The box containing the mould.

2) Cope

The top half of any part of a 2-part mould.

3) Drag

The bottom half of any part of a 2-part mould.

4) Core

A shape inserted into the mould to form internal cavities.

5) Core print / chaplets

A region used to support the core.

Mould Cavity

The hollow mould area in which metal solidifies into the part.

7) Riser :

An extra cavity to store additional metal to prevent shrinkage.

8) Gating System :

Channels used to deliver metal into the mould cavity.

9) Pouring Cup :

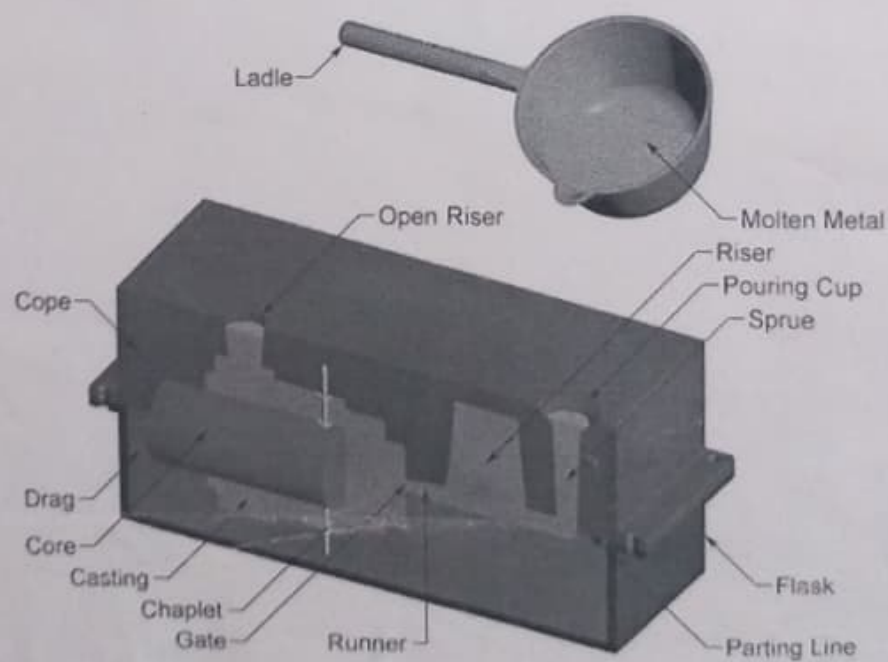
The part of the gating system that receives poured metal.

10) Sprue :

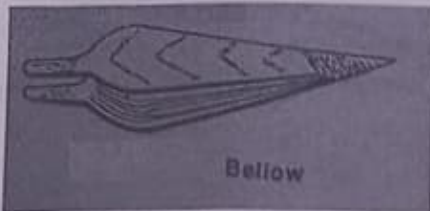
Vertical channel / passage through which molten metal flow from the pouring to mould cavity.

11) Ladles -

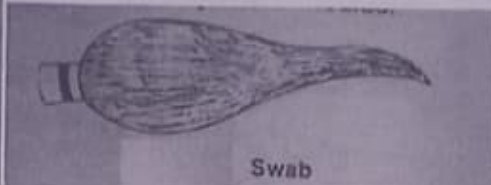
It receive molten metal from the melting furnace and pour the same into the mould. Made up of ceramic materials.



CASTING TOOLS



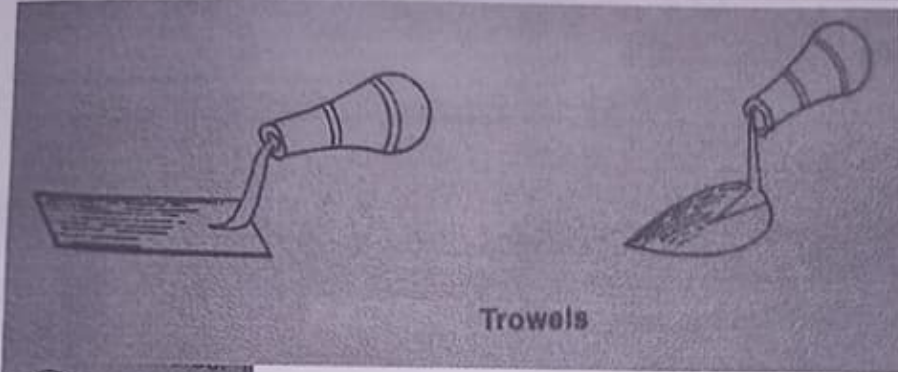
Bellow



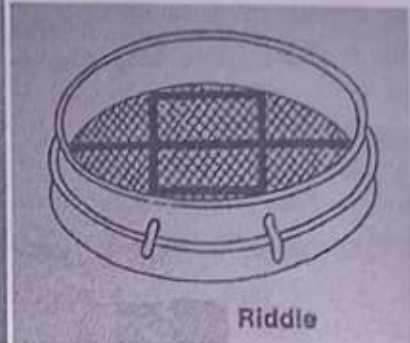
Swab



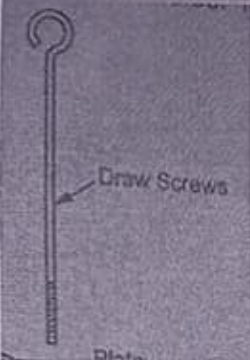
Mallet



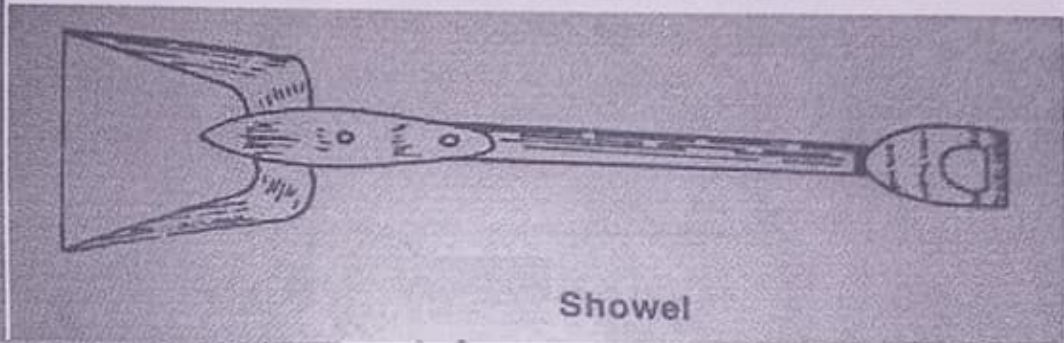
Trowels



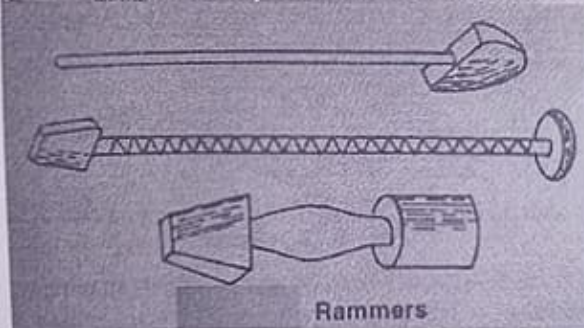
Riddle



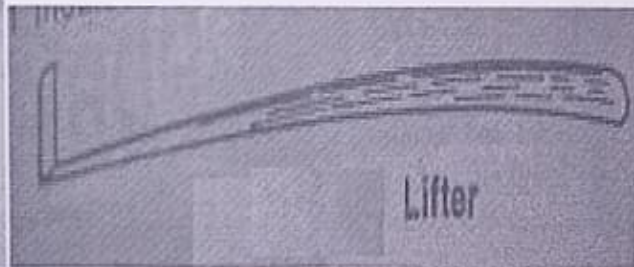
Draw Screws



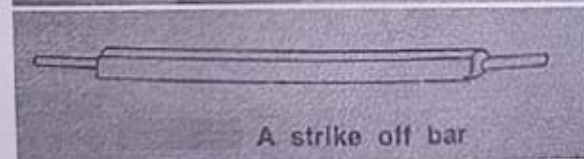
Showel



Rammers



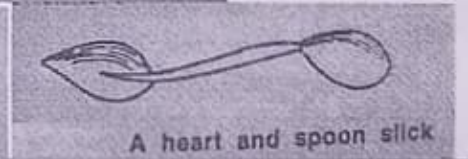
Lifter



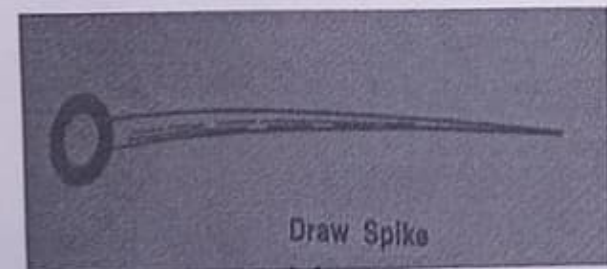
A strike off bar



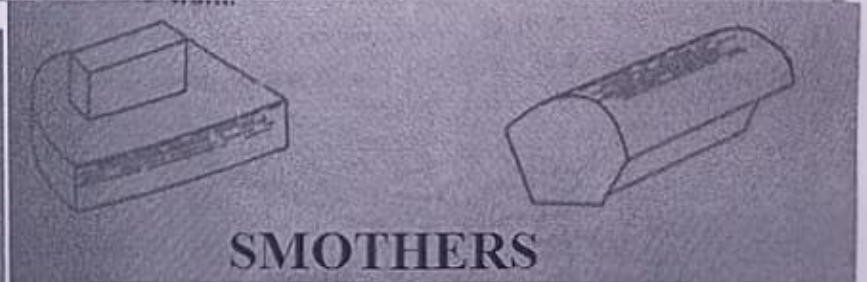
Sprue cutter



A heart and spoon slick



Draw Spike



SMOTHERS