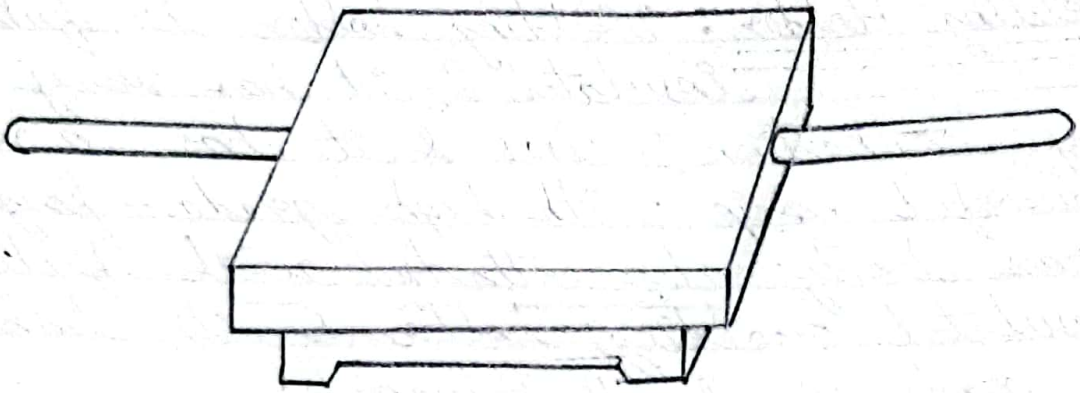

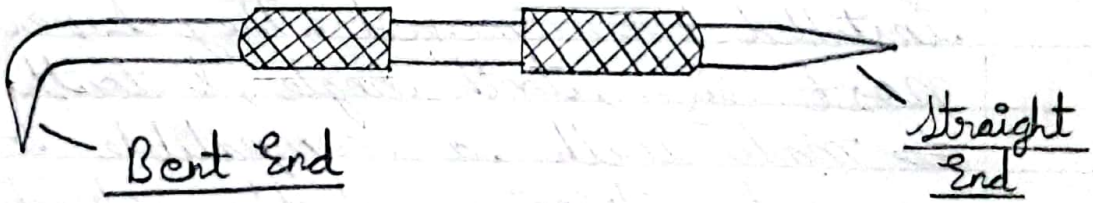
Bent End
Straight End

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36. **Surface Plate:** It is used for testing flatness of the work piece. The surface plate is made of Cast Iron, hardened steel or Granite stone. It is specified by length, width & grade. Handles are provided on two opposite sides, to shift it from one place to another.

**Uses:-** It is used as the main horizontal, reference plane for precision inspection, marking out & tooling setup.

37. **Scriber:**

A scriber is a slender steel tool, ranging from 125 mm to 250 mm. It has two pointed ends, the bent end is used for making lines where the straight end cannot reach.

**Uses:-** It is a tool used in metal work to mark lines on workpieces, prior to machining.

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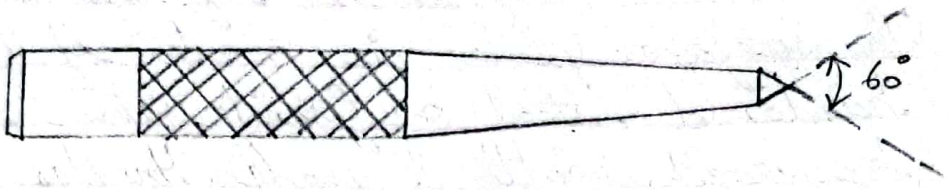
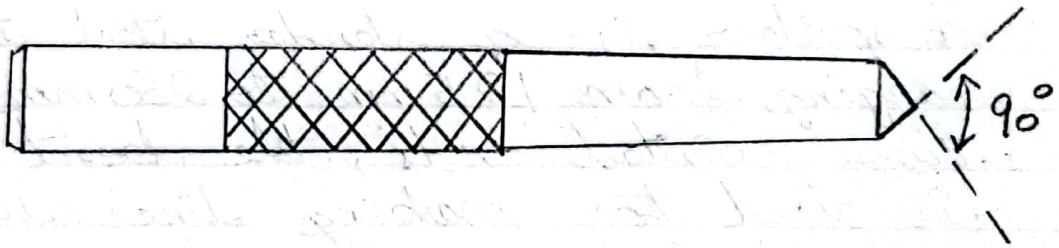

60°


90°

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38. **Dot Punch:** It is similar to centre punches but have sharper point ground to an angle of 60 degrees by holding it tangentially to a tool grinder & rotating it.

**Uses:-** It is normally used to mark the centre of a hole to be drilled, either by hand or on the drilling machine.

39. **Centre Punch:**

The centre punch is made from mild steel, with the point hardened & tempered, so that it withstands impact with the material it is marking.

**Uses:-** It is normally used to mark the centre of a hole to be drilled, either by hand or on the drilling machine.

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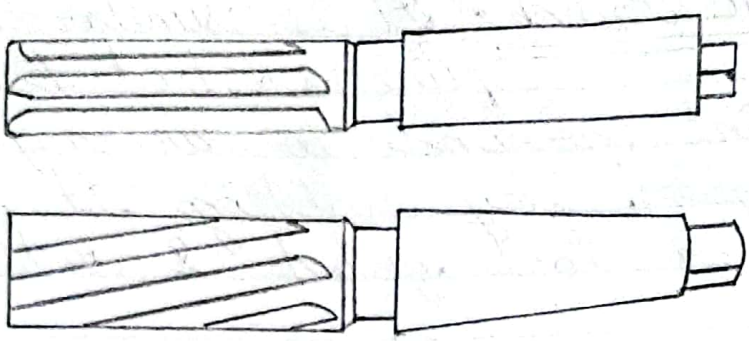

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40. **Reamers:** A reamer is a type of rotary cutting tool used in metalworking. There are many different types of reamer & they may be designed for use as a hand tool or in a machine tool, such as a milling machine or drill press.

**Uses:-** It is used for enlarging and finishing to accurate dimensions holes that have been drilled, bored or cored.

41. **Carpenter's Vice:**

It is a device consisting of two parallel jaws for holding a work-piece. One of the jaws is fixed and the other movable by a screw, a lever, or a cam.

**Uses:-** It is primarily designed to hold clamp wood without damaging the surface. Wood often needs to be clamped when completing tasks like sawing, drilling, or carpentry.

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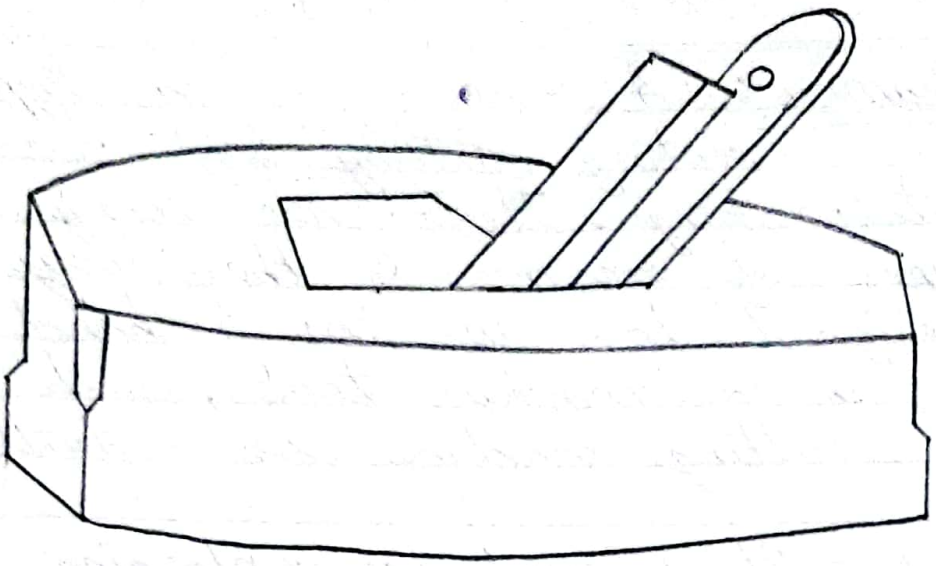

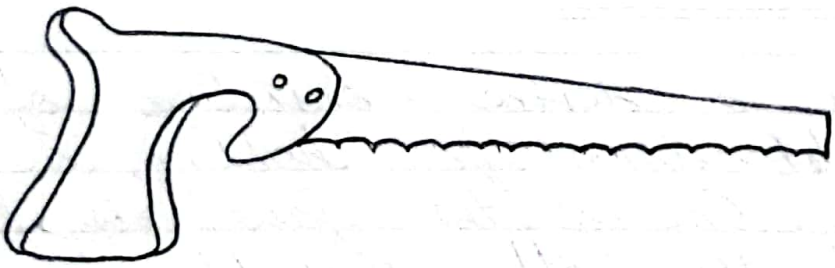

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42. **Smoothing Plane:** A smoothing plane or smooth plane is a type of bench plane used in woodworking. The smoothing plane is typically the last plane used on a wood surface, removing very fine shavings to leave a smooth finish.

**Uses:-** It is used for general planing of wood and is a smaller version of a jack plane.

43. **Compass Saw:** A compass saw has a long tapered blade & a curved blade. It is designed for cutting curves or working in awkward and confined spaces where a larger saw could not fit. It's similar to an angle grinder, but get a bit more accuracy & a better quality finish.

**Uses:-** It has a dagger-like point at the tip of the blade to poke through soft materials such as drywall & paneling.

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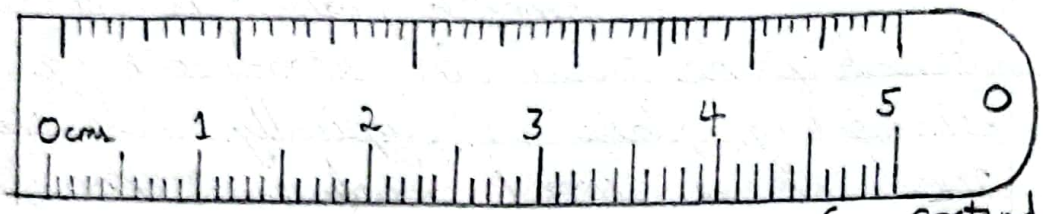
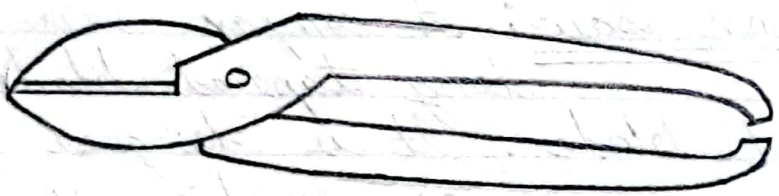
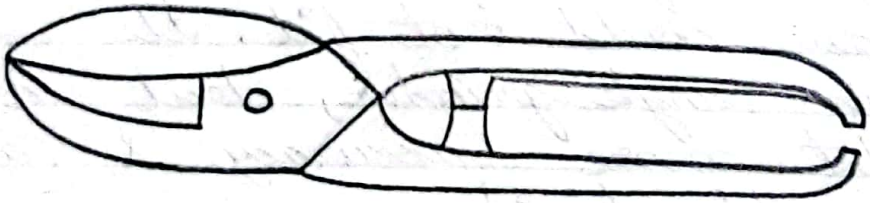
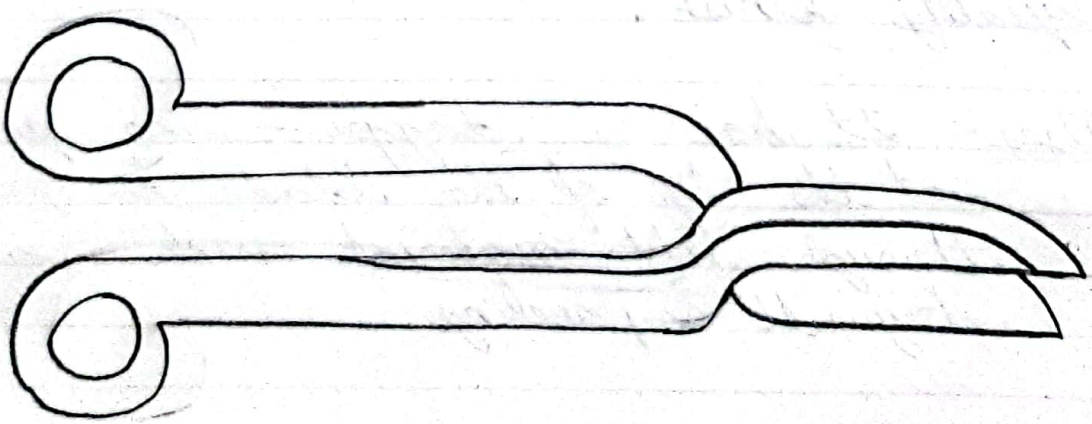



extends upto 10, 15, 20 & so on centimeters.

## Steel Rule







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44. **Steel Rule:** Steel rules come in rigid and flexible versions. While their primary purpose is accurate measurement, they can also be used as guides for laying out lines, and if rigid enough, for cutting.

**Uses:-** They are used to measure the linear dimensions of work pieces.

45. **Snips:** It is a cutting tool used to cut sheet metal & other tough wires. Workers use different types of snips:-

**Straight snip:** It has a straight blade and is used for cutting straight lines and for trimming the edges.

46. **Bent or curved snip:** It is having curved blade & is used for cutting circles and irregular shapes, & trimming cylindrical edges.

47. **Double snip:** It is used for cutting thin cylinders, stove pipes & for cutting holes and light gauge metals.

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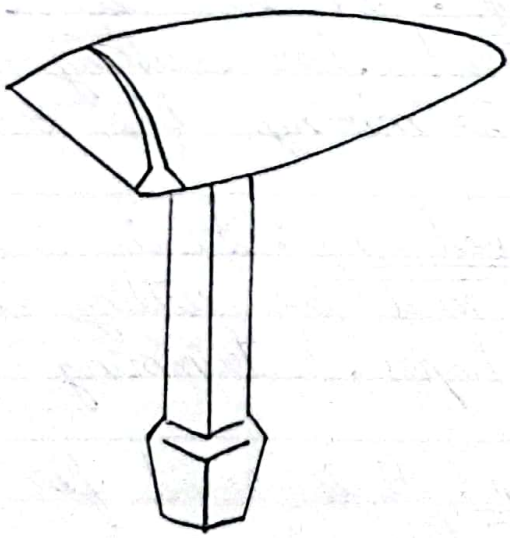

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48. **Bench Shear**: In this type of hand cutting machine, the sheet is cut by shearing action. The force is applied through compound lever. The machine is able to cut the sheet metal upto 2 mm thick.

**Uses**:- It is usually used for cutting rough shapes out of medium-sized pieces of sheet metal, but can't do delicate work.

49. **Funnel stake**: They are so named because of their original use in the making of Tinplate funnels or Tundish. They can be used generally for hand forming of funnels and similar conical items in Beaten Metalwork or Tinsmithing.

**Uses**:- It is used for forming conical shapes and for making wire rings, seaming funnels & shaping.

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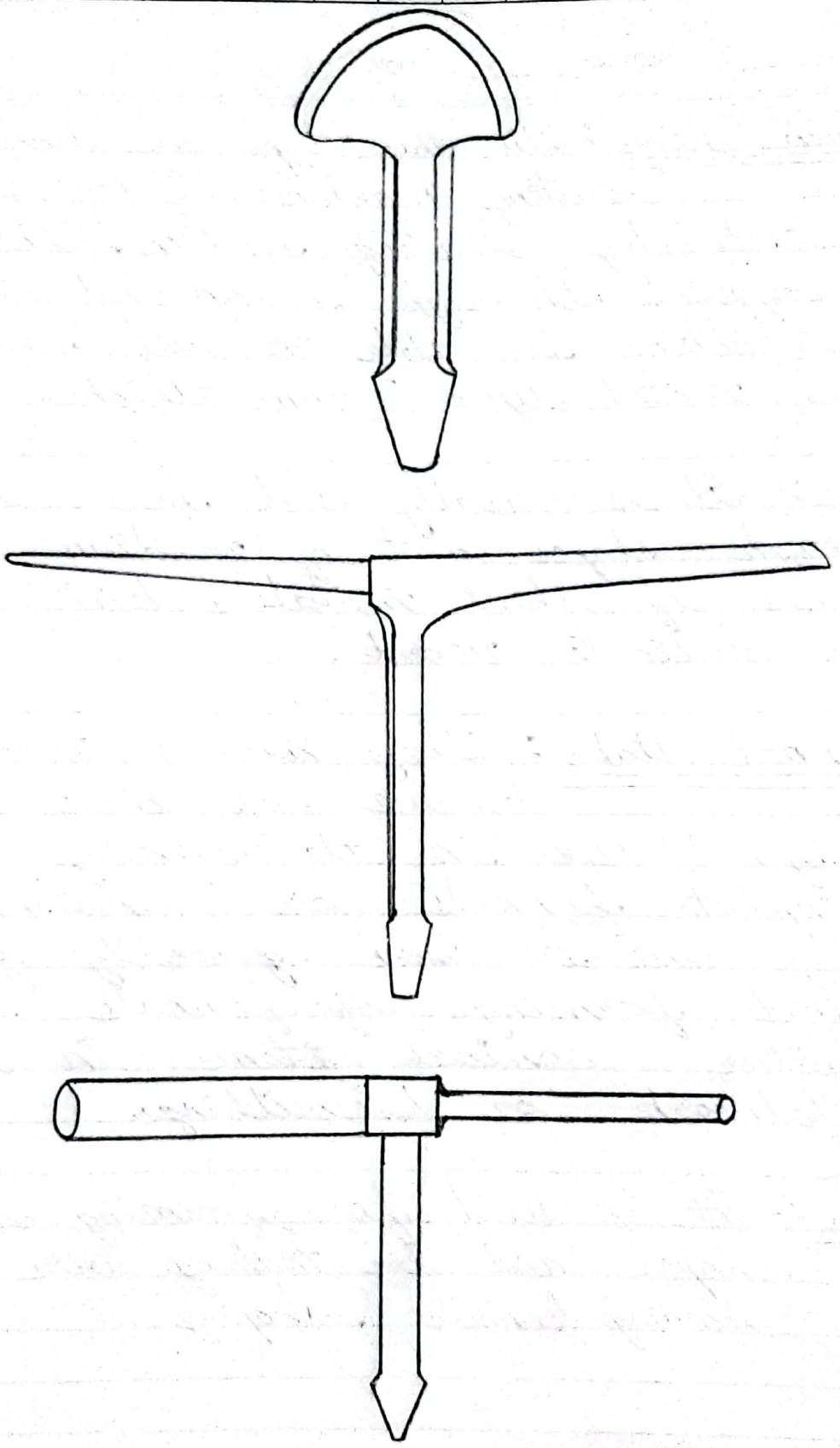

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50. **Half Moon Stake**: This stake has a sharp edge in the form of an arc of a circle, dovelled along one side.

**Uses**:- It is used for folding edges of cylindrical shaped articles and seaming.

51. **Beak-horn Stake**: It is a small bench anvil having a slender horn one side.

**Uses**:- It is used for shaping round, square surfaces, bending edges, and making corners.

52. **Conductor Stake**: Conductor stake has two cylindrical horns of different diameters.

**Uses**:- It is used for forming, riveting, and seaming small sized pipes & tubes.

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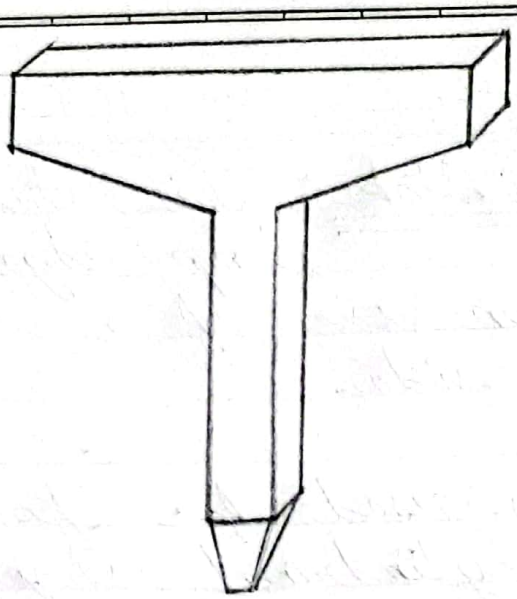

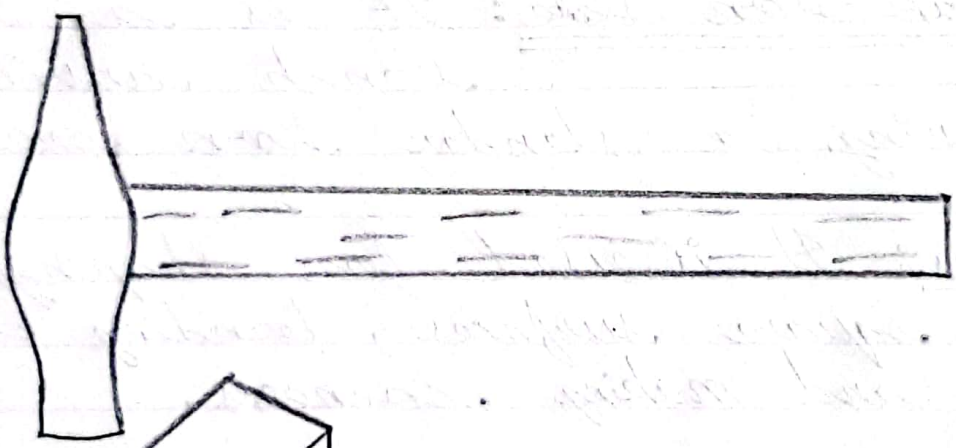

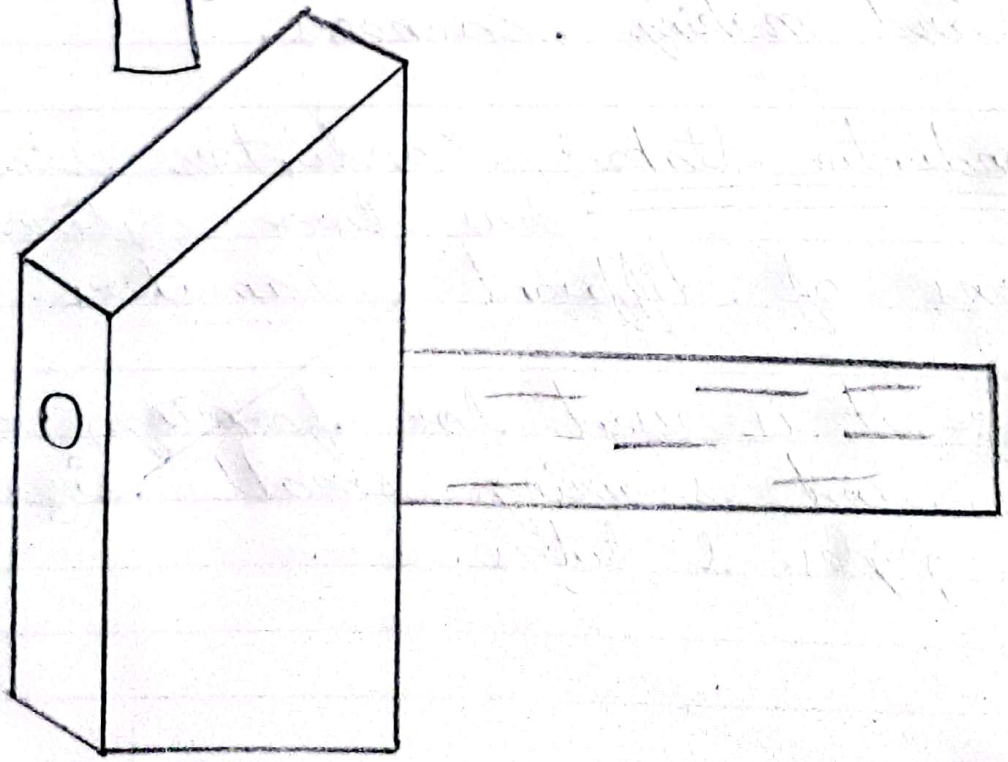

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53. **Hatchet Stake:** The front surface is curved and dull polished while the back surface is unfinished. The top edge is sharp with one 90° end and one radiused end.

**Uses:-** It is used for making straight, sharp bends & folding edges.

54. **Riveting Hammer:** A hammer usually with a flat face and cross peen used for driving rivets and beating metal.

**Uses:-** It is used to drive rivets.

55. **Setting Hammer:** It has a square, flat face and its peen is tapered on one side.

**Uses:-** It is used for setting down the edges for making a double seam.

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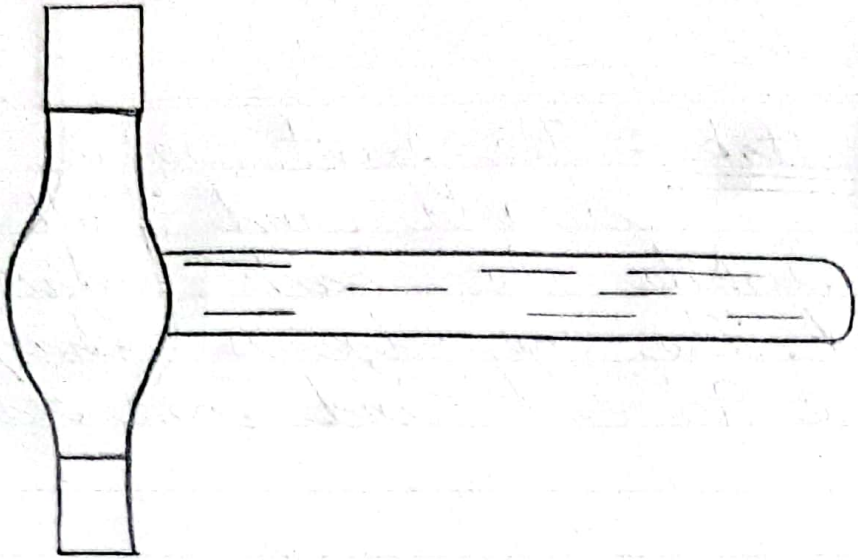

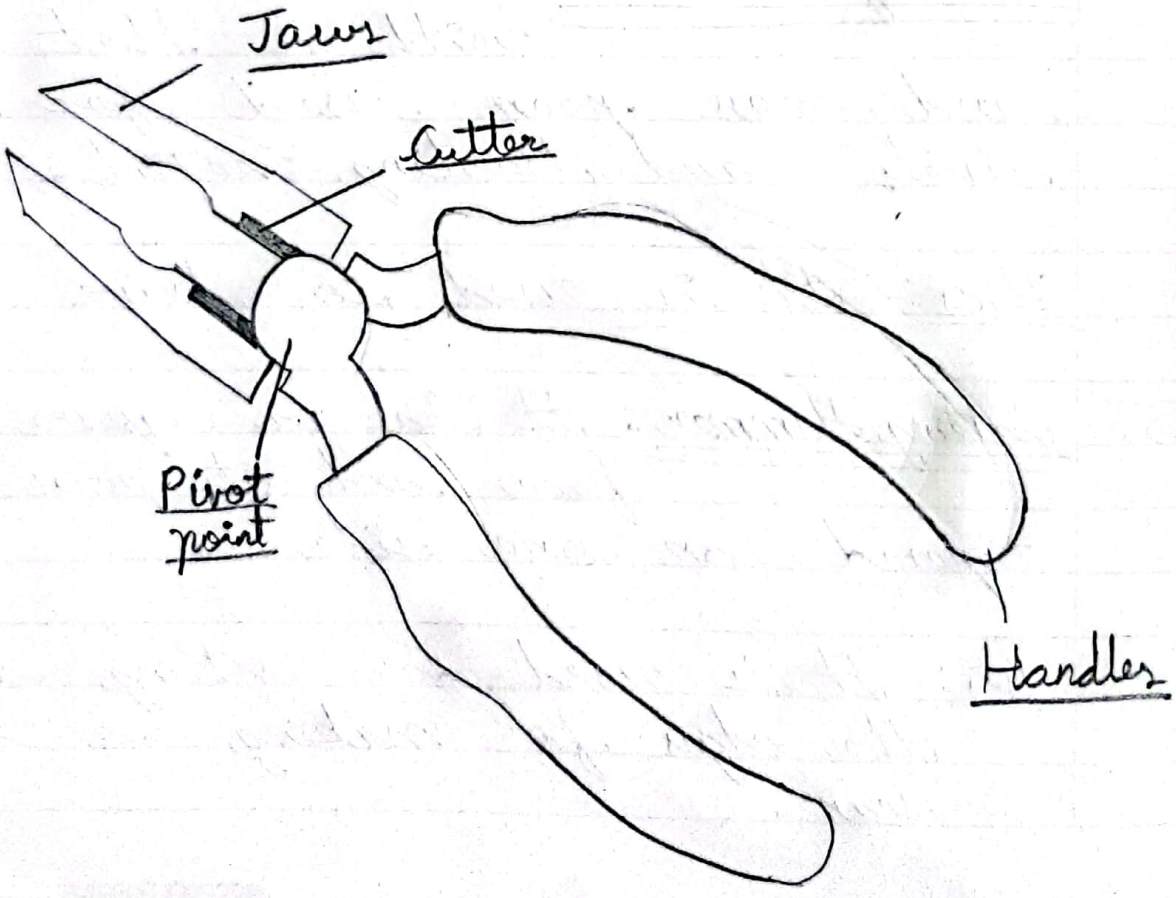
Jaws
Cutter
Pivot point
Handles

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56. **Raising Hammer**: It is used for making depressions on a flat sheet, and it is particularly adapted for making trays, bowls & similar objects.

**Use**:- It is used for raising sides of a nonferrous sheet metal bowl/dish, making them deep.

57. **Pliers**: It is a hand-operated tool for holding and gripping small articles or for bending and cutting wires.

**Use**:- A small tool for holding or pulling small things like nails, or cutting wires.

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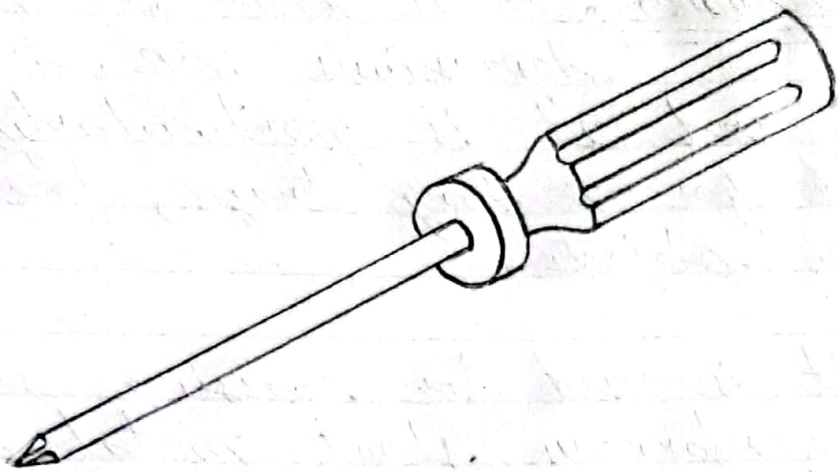

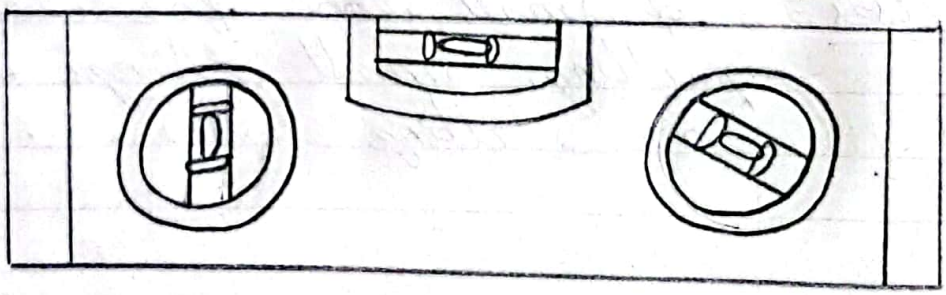

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58. **Screwdriver**: A screwdriver has a handle and a shaft, ending in a tip the user puts into the screw head before turning the handle.

**Uses**:- It is a tool used for turning screws with slotted heads.

59. **Level**: It is device for establishing a horizontal plane. It consists of a small glass tube containing alcohol or similar liquid and an air bubble; the tube is fixed and sealed in a wooden or metallic block or frame.

**Uses**:- It is used to determine whether a surface is horizontal (level) or vertical (plumb).

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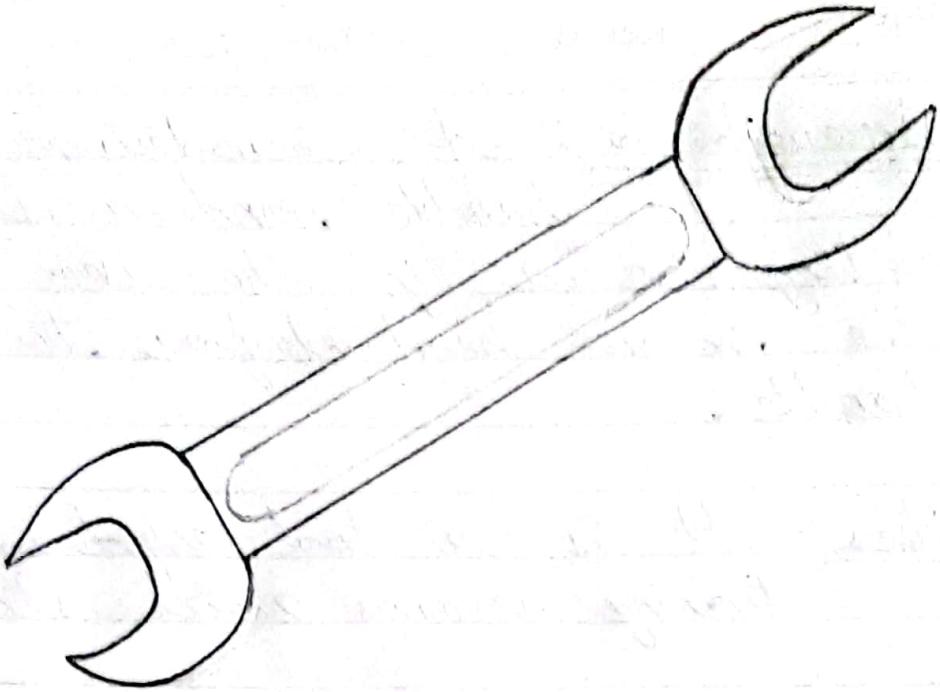

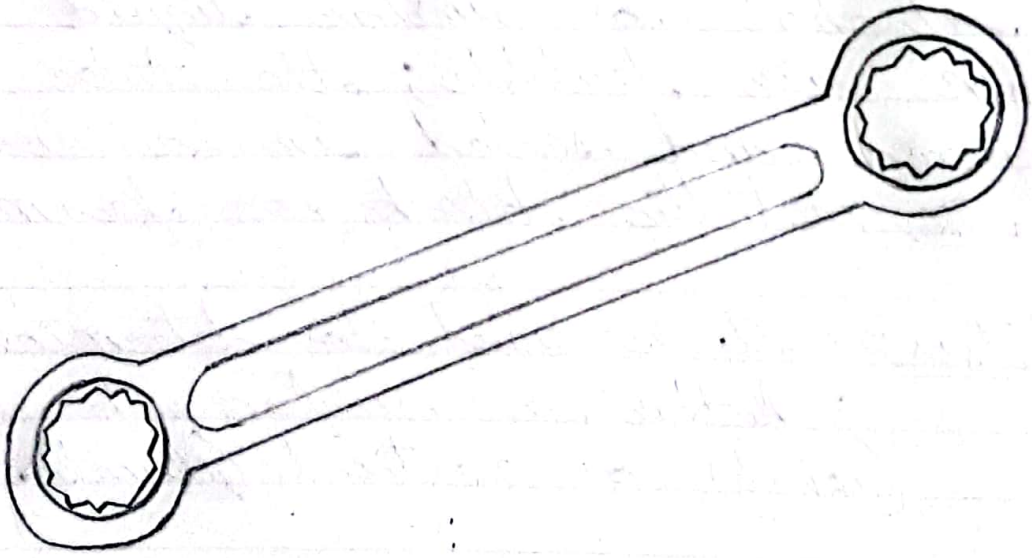

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60. **Open-ended spanner:** They are versatile, single-piece tools that can be used on most types of fasteners around the home and across industries. Their head has two jaws forming a V-shaped profile with two parallel flat sides.

**Uses:-** They are generally used for tightening and loosening of rotary fasteners such as nuts and bolts.

61. **Box-ended spanner:** They have loop like structures at both ends. The loops of a box-ended spanner are narrow on the sides that makes it easier to rotate nuts that cannot be rotated with the help of open-ended spanner.

**Uses:-** They are used for loosening stuck fasteners because we can apply more torque.

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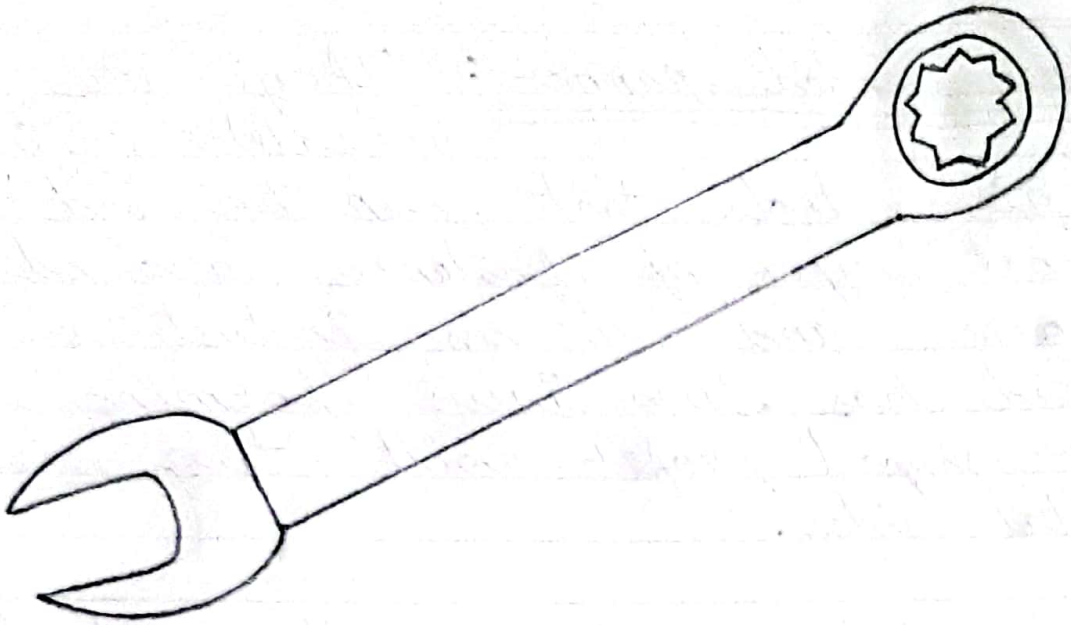

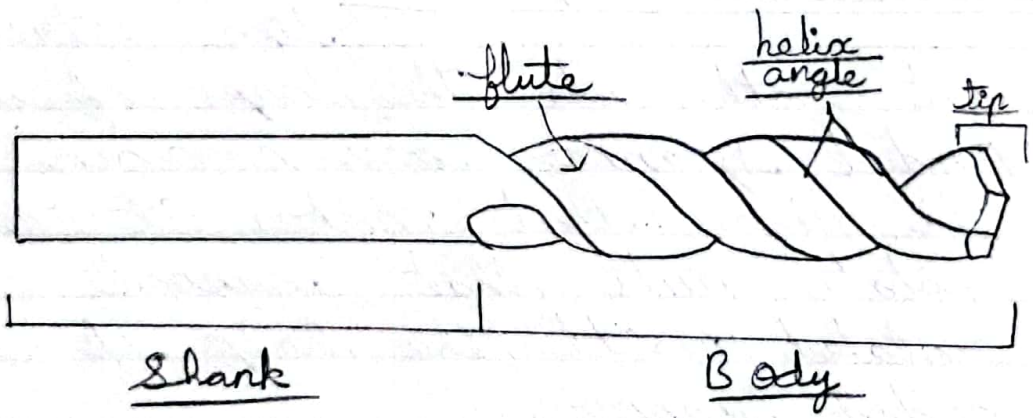
flute
helix angle
tip
Shank
Body

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62. Combination Spanner: They are double-ended tools and serve the functions of two spanners at once. One end is an open-ended spanner and the other end is a ring spanner.

Uses:- They are used to provide grip for mechanical purposes used for fastening nuts and bolts.

63. Twist Drill Bit: They are most frequently used for metal cutting and will cut anything from wood and plastic, to steel and concrete. A twist drill is a metal rod of a specific diameter that has two, three or four spiral flutes running most of its length.

Uses:- They are used for drilling metal, wood, plastic but not masonry & concrete products.

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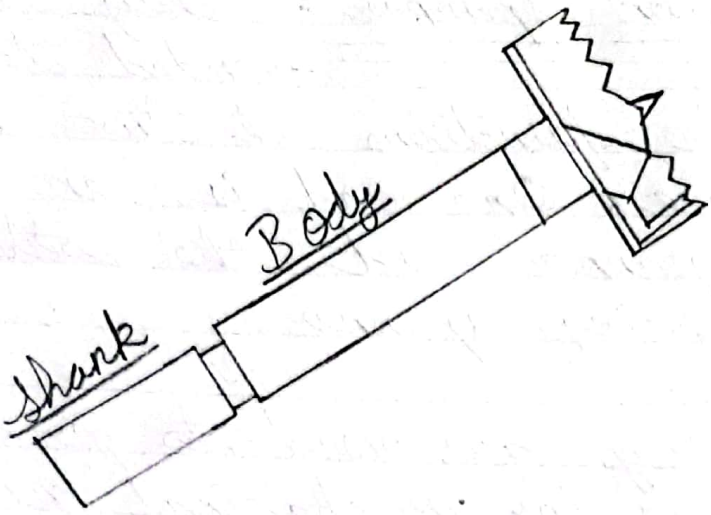
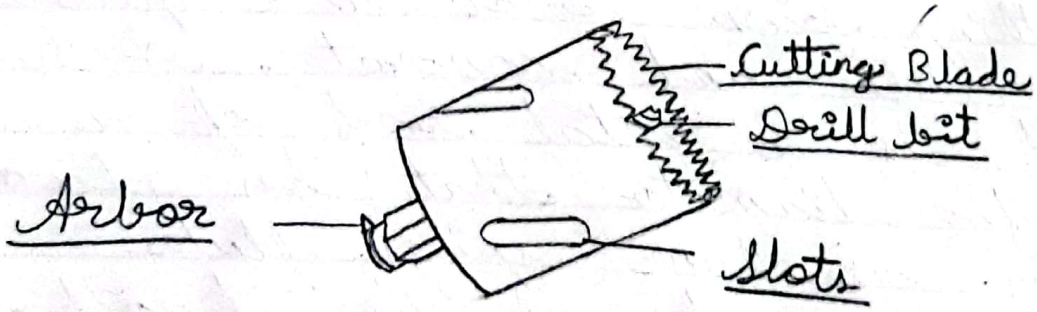

Body
Shank


Cutting Blade
Drill bit
Arbor
Slots

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64. Forstner Drill Bit: They have excellent lifespan for drilling accurate-fit holes. It has a short centring tip with two main and one periphery (toothed-edge) cutting edges enable smooth splinter-free drilling.

Uses:- They are used to drill a flat-bottomed hole in wood.

65. Hole Saw: Also known as a hole cutter, it is a saw blade of annular shape (ring shape), whose annular kerf creates a hole in the workpiece without without having to cut up the core material. It is used in a drill.

Uses:- They are used for cutting holes with a much larger diameter than a standard drill bit.

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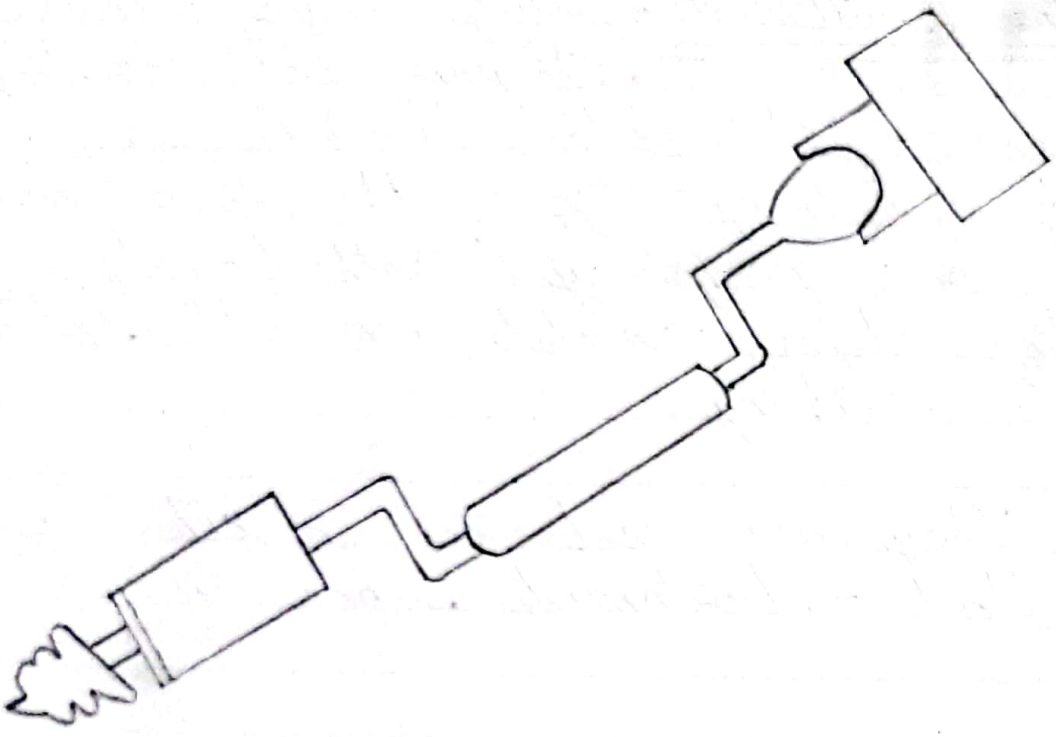

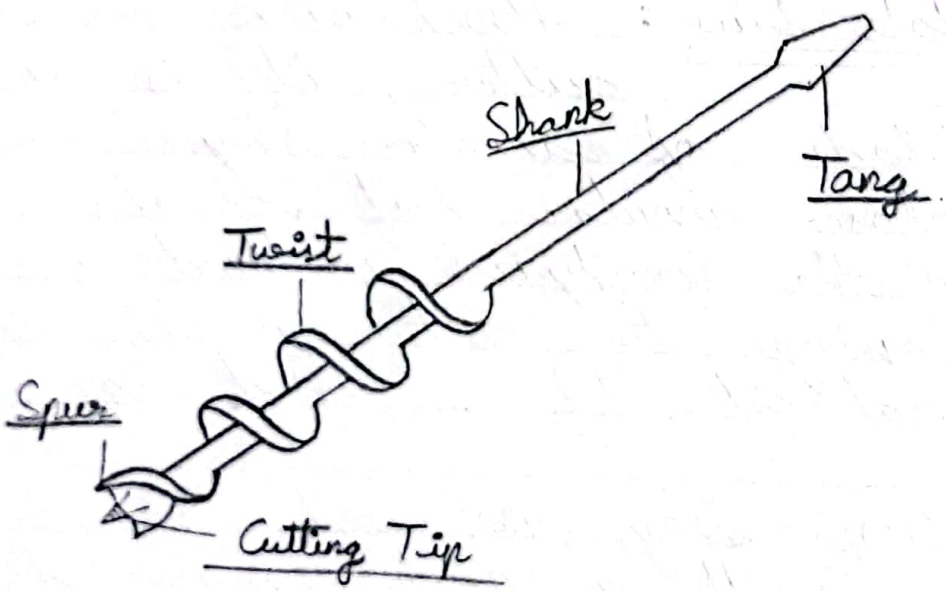
Shank
Tang
Twist
Spur
Cutting Tip

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66. **Carpenter's Brace:** It is a hand tool used with a bit. Pressure is applied to the top and the tool is rotated with a U-shaped grip. The U-shaped part is a kind of crank. It gives the brace much greater torque than other kinds of hand-powered drills.

**Uses:** It is used to drill large holes in wood.

67. **Auger Bit:** It is a tool used with a carpenter's brace for drilling holes in wood. It looks like a corkscrew and has six parts: screw, spurs, cutting edges, twist, shank and tang. The screw looks like a tapered wood screw and is short and small in diameter.

**Uses:** They are bits used to drill holes into wood. They are commonly used for boring holes into bulkheads and general timber applications.

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68. **Jennings Pattern Auger Bit:** They are the highest quality auger bits in market. The bits are well balanced, with a fast clearing action that is preferred by furniture makers & other crafts workers. The two cutting spurs cut the fibers of the wood as the screw thread tip pulls the bit through the wood.

**Use:-** They are used for cutting through softwood and hardwood.

69. **Countersink Drill Bit:** They are an essential tool for any woodworker or metalworker. These specialized drill bits are designed to create a conical hole in a material that allows for the smooth, flush fitting of screws, bolts and other fasteners.

**Use:-** They are used to make conical holes (in wood, metal & plastics) to hide the head of woodscrews and metal rivets.

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70. **Spade Bit:** They have a shape similar to a spade. Some people may also call them 'paddle bits'. They have two flat blades with a sharp point in the middle, which spin rapidly & chip away at the wood to create a hole.

**Uses:-** They are used to cut deep holes in wood. This drill bit removes the wood chips quickly.

71. **Rubber Mallet:** It is a lightweight hammer like tool with a head of molded rubber or hard plastic & a wooden or fiberglass handle.

**Uses:-** They are most commonly used for striking an object that a normal hammer would leave a mark in.

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72. Junior Hacksaw: It is a small scale version of a full size hacksaw. Two hands are required to use the full size hacksaw, whilst one hand is needed for the junior hacksaw.

Use:- They are used to cut and shape metals, tubes and some plastics.

73. Coping Saw: A coping saw is a type of saw used to cut intricate external shapes and interior cut-outs in wood-working or carpentry. Coping saw blades are always thicker and much coarser cutting than typical fretsaw blades & many others of its family members. They can however cut slight bends in the work, allowing circles to be cut if used carefully.

Use:- They are used to cut curves in thin sheets of wood or plastic, such as acrylic.

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74. **Rip saw**: The cutting edge of each tooth has a flat front edge & it is angled backward by about 8°, in contrast to a crosscut saw, which has teeth angled backward by about 15°.
**Uses**:- They are used to cut thicker wood (timber) along the grain (lengthways).

75. **Surform**: It is a versatile item that can do the jobs otherwise undertaken by planes, files & rasps. The unique blade is made from steel with holes in it and these holes have one sharp sided cutting edge.
**Uses**:- They are used to shape, level and smooth wood. The blades can be easily replaced when blunt or damaged.

76. **Flat hand file**: Hand files are almost blunt, other than a slight taper in thickness. Hand files have one safe edge, which suits them to filing in corners.
**Uses**:- They are used to remove waste material to a finished size. Using a file is the first stage of finishing/smoothing materials.

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78. ~~Flat Hand File :~~

77. **Bench Hook :** A bench hook is a workbench appliance used in woodworking to hold a workpiece in place while crosscutting with a hand saw. A bench hook is a simple method used to improve accuracy & safety.

**Uses :-** They are used to hold wood more securely when sawing. One end is fixed in it to stop objects from moving.

78. **Marking Knife :** Marking knives are either made from a single piece of steel, or additionally have a handle made of wood or plastic. The blades on marking knives are made of tool steel, have either a skewed end or a spear point, & the knife edge is beveled on either one side or both sides of blades.

**Uses :-** They are used to mark (score) lines across wood. Particularly useful when marking out accurate joints.

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79. **Electric Drill:** A power drill is a tool with an electrical motor that rotates a replaceable drill bit at your choice of speeds to create a hole in a variety of materials.
**Uses:-** They are used with drill bits to quickly drill holes in wood, metal, plastic & concrete.

80. **Bradawl:** A bradawl is a woodworking hand tool with a blade similar to that of a straight screwdriver & a handle typically made from wood or plastic.
**Uses:-** It is used to make indentations in wood or other materials in order to ease the insertion of a nail or screw.

81. **Chalk Line:** It is a tool for marking long, straight lines on relatively flat surfaces, much farther than is practical by hand or with a straightedge.
**Uses:-** They are used to lay out straight lines between two points, or vertical lines by using weight of line reel as plumb line.

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82. **Speed Square:** It is a multi-purpose triangular carpenter's tool used for marking out. Its functions include many of those of a combination square, try square and framing square.
**Uses:-** They are used to make basic measurements & mark lines on dimensional lumber, and as a saw guide for short 45° and 90° cuts.

83. **Scratch Awl:** It is a woodworking layout and point-making tool. The scratch awl is basically a steel spike with its tip sharpened to a fine point.
**Uses:-** It is used to scribe a line to be followed by a hand saw or chisel when making woodworking joints and other operations.

84. **Die Stock:** They are tubular parts used for setting & turning dies when cutting or shaping materials. They can hold a range of different sizes of hex & split-adjustable dies.
**Uses:-** They are often used for cutting and threading metal objects like ~~pi~~ pipes.

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85. **Bumping Body Hammer**: It is a general purpose body hammer, good for working dents large & small. The square head is best for working in corners.
**Uses**:- It is used to straighten and form metal.

86. **Napping Hammer**: The napping hammer has a high carbon steel head with two tapered faces and weighs about 3 pounds.
**Uses**:- It is used for chipping stone surfaces or for forming stones during road construction or similar stone work.

87. **Mason's Hammer**: The mason's hammer has a flat striking face on one end of the head and a tapered chisel on the other end.
**Uses**:- It is used for setting and cutting bricks and flat stones.

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88. Sawmaker's Hammer: The sawmaker's hammer has a tapered blunt face on one end of the head and a tapered chisel face on the other end.
Uses:- It is used for setting the teeth on saws when a setting tool is unavailable.

89. Soft-Faced Hammer: They are capable of delivering heavy blows to machined, highly polished or soft surfaces without damaging the surface.
Uses:- It is a hammer to use when non-marring is important, such as cabinetry & other fine woodworking jobs.

90. Railroad Track Maul: The railroad track maul has a flat tapered head which weighs about 10 pounds.
Uses:- They are used for driving railroad track spikes.

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91. **Wooden Maul**: The wooden maul has a cylindrical head which is about 8 inches in diameter & about 10 inches long.

Uses :- It is used to drive wooden pickets, posts & stakes.

92. **Timber Carrier**: The timber carrier consists of a pair of large chisel-bill hooks with sharp, pointed ends. These hooks are hung by pivots in the center of a large wooden handle, four feet in length.

Uses :- It is used to lift logs and timbers from one level to another as well as carry them.

93. **Brick Trowel**: It has a pointed flat blade at one end, & a steel shank that attaches to a wooden handle at the other.

Uses :- It is used to scoop & spread mortar.

Teacher's Signature _____