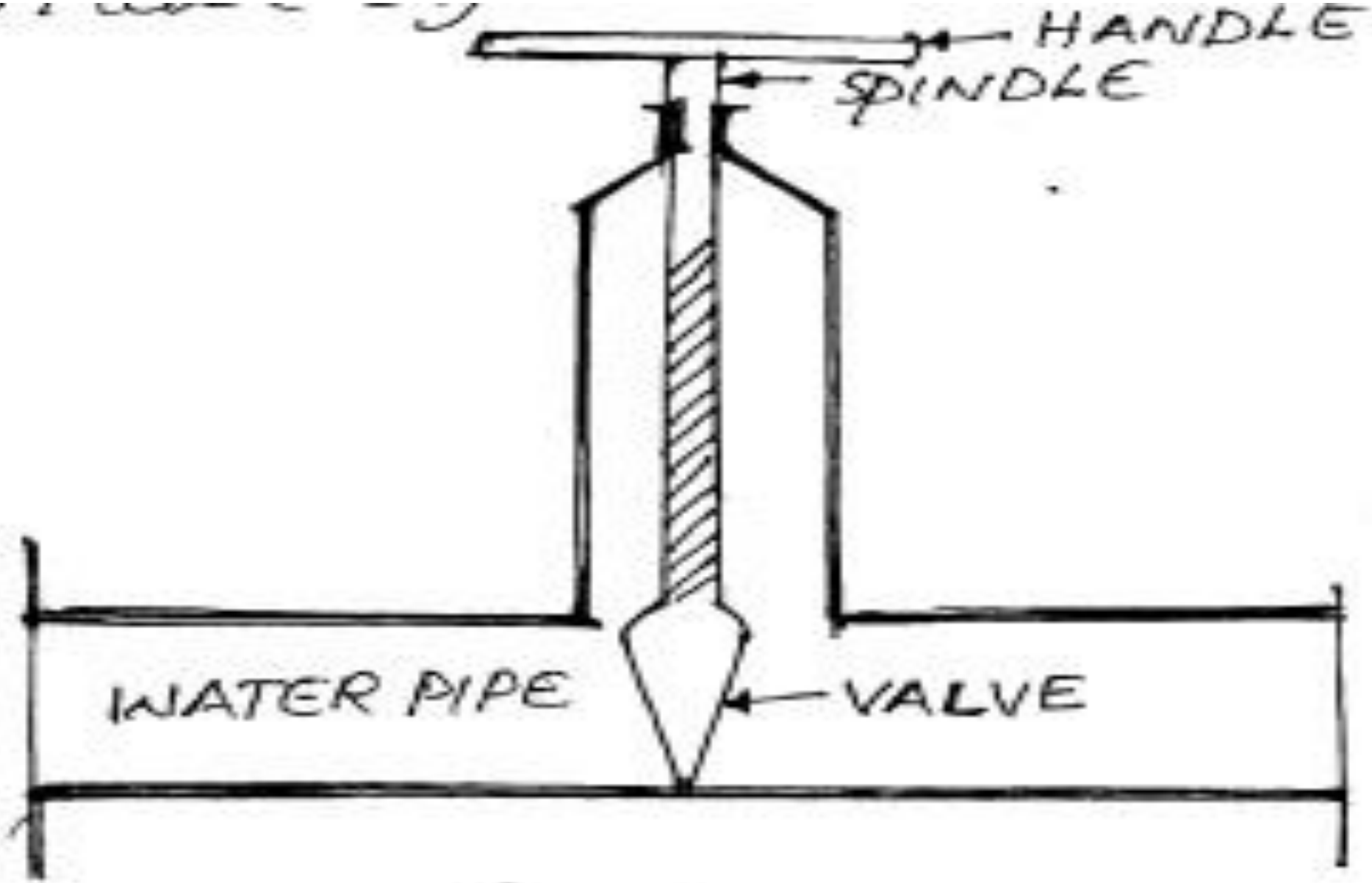
Pipe Appurtenances

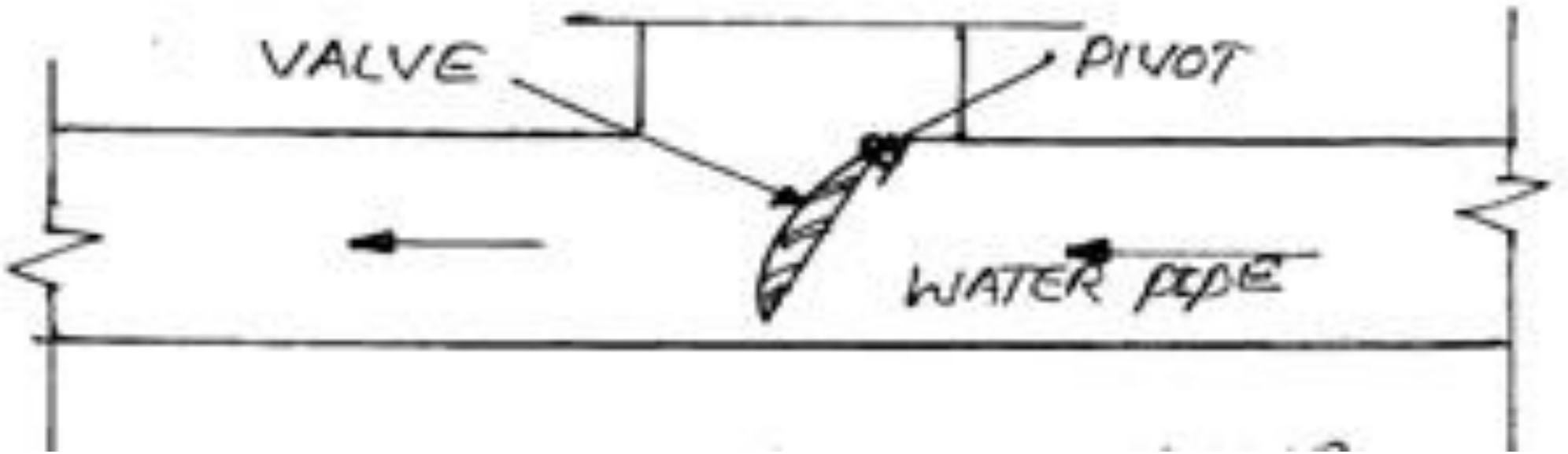
SLUICE VALVES

- These are also known as gate-valves or stop valves. These valve control the flow of water through pipes.
- These valves are cheaper, offers less resistance to the flow of water than other valves. The entire distribution system is decided into blocks by providing these valves at appropriate places.
- They are provided in straight pipeline at 150-200m intervals. When two pipes lines interest, valves are fixed in both sides of intersection. When sluice valve is closed, it shuts off water in a pipeline to enable to undertake repairs in that particular block. The flow of water can be controlled by raising or lowering the handle or wheel


HANDLE
SPINDLE
WATER PIPE
VALVE

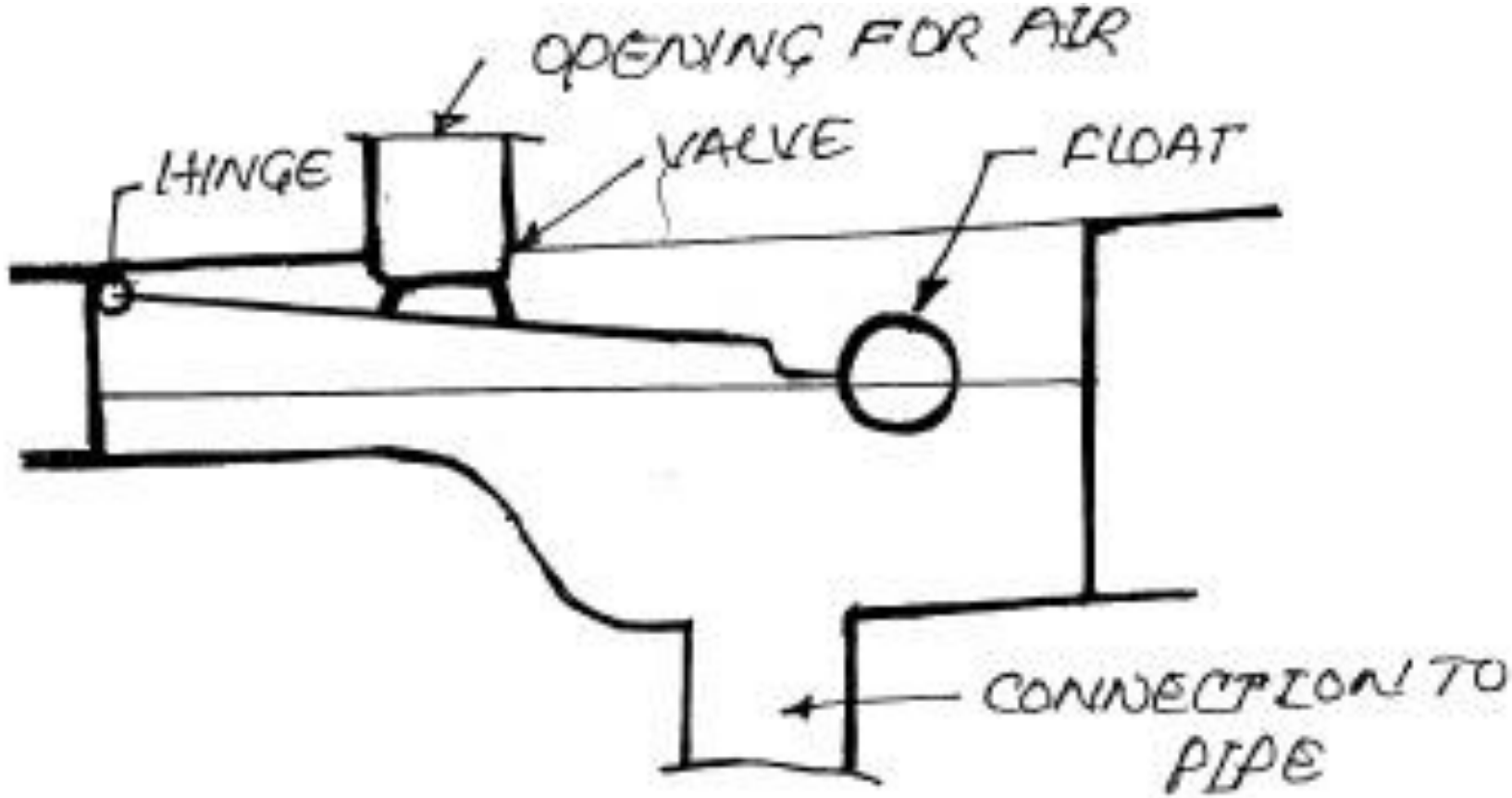
CHECK VALVE or REFLUX VALVE

- These valves are also known as non-return valves.
- A reflux valve is an automatic device which allows water to go in one direction only.
- The swing type of reflux valve as shown in the following figure is widely used in practice.



- When the water moves in the direction of arrow, the valve swings or rotates around the pivot and it is kept in open position due to the pressure of water.
- When the flow of water in this direction ceases, the water tries to flow in a backward direction. But this valve prevents passage of water in the reverse direction.
- Reflux valve is invariably placed in water pipe, which obtain water directly from pump. When pump fails or stops, the water will not run back to the pump and thus pumping equipments will be saved from damage.

- ***AIR RELIEF VALVES***
  Some times air is accumulated at the summit of pipelines and blocks the flow of water due to air lock.
- In such cases the accumulated air has to be removed from the pipe lines. This is done automatically by means of air relief valves
- This valve consists of a chamber in which one or two floats are placed and is connected to the pipe line.
- When there is flow under pressure in the pipeline water occupies the float chamber and makes the float to close the outlet. But where there is accumulation of air in the pipeline, air enters the chamber, makes the float to come down, thus opening the outlet.
- The accumulated air is driven out through the outlet.


OPENING FOR AIR
HINGE
VALVE
FLOAT
CONNECTION TO PIPE

FIRE HYDRANTS

et provided in water pipe for tapping water mainly in case of fire. They are located at 100 to 150 m a part along the roads and also at junction roads. They are of two types namely.

lydrants.
ydrants

s kept in under ground chamber flush with footpath covered by C.I. cover carrying a sign board “F-H”.

main projected 60 to 90cm above ground level as shown in fig 7.4 They have long stem with screw and nut to regulate the flow. In case of fire accident , the fire fighting squad connect their hose to the hydrant and draw the water and spray it o

with hose
e and reliable
e quantity of water

Hydrant- Post Fire Hydrant

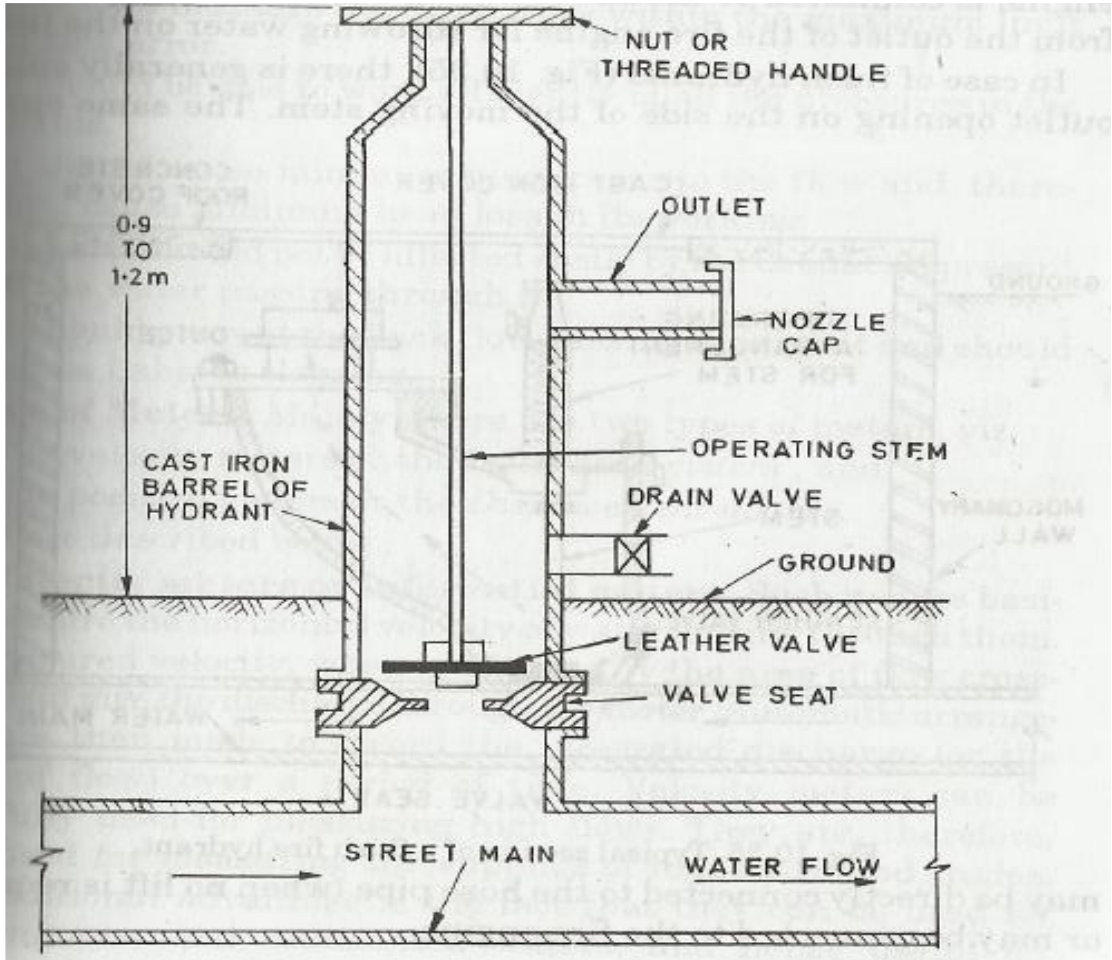


Fig. 10.34. Typical section of the post fire hydrant.

- **DRAIN VALVES OR BLOW OFF VALVES**
  These are also called wash out valves they are provided at all dead ends and depression of pipelines to drain out the waste water. These are ordinary valves operated by hand.
- **SCOUR VALVES**
  These are similar to blow off valves. They are ordinary valves operated by hand. They are located at the depressions and dead ends to remove the accumulated silt and sand. After the complete removal of silt; the value is to be closed