Civinnovate

Discover, Learn, and Innovate in Civil Engineering

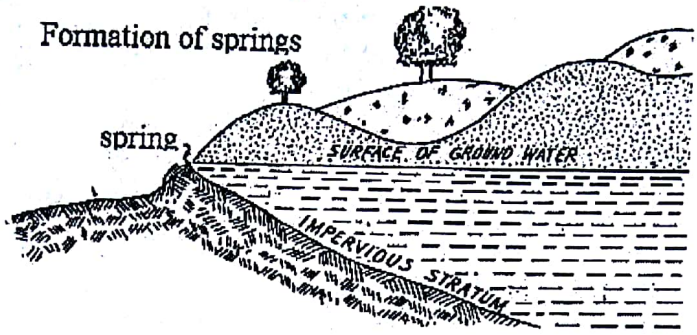


Fig.2.1 Gravity spring

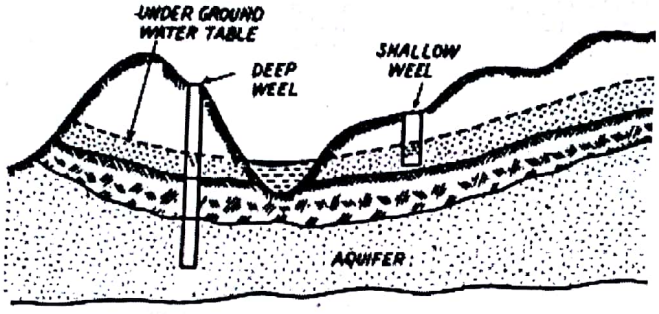


Fig.2.2 Deep and shallow well

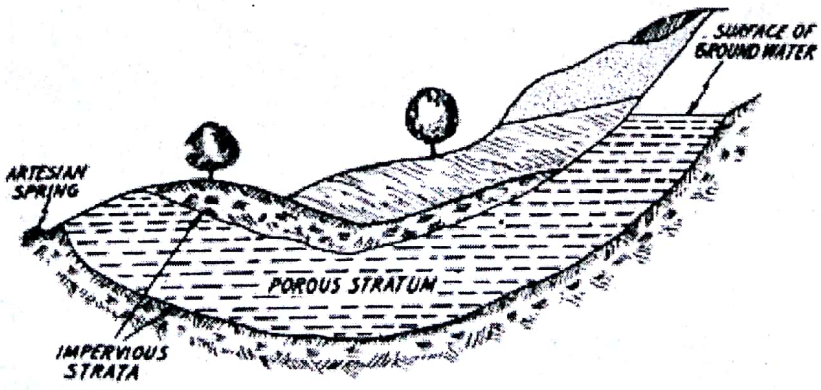


Fig.2.3 Artesian spring

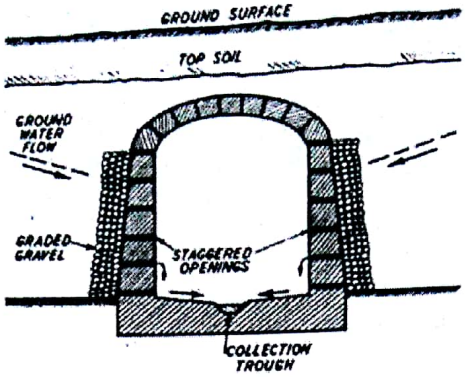
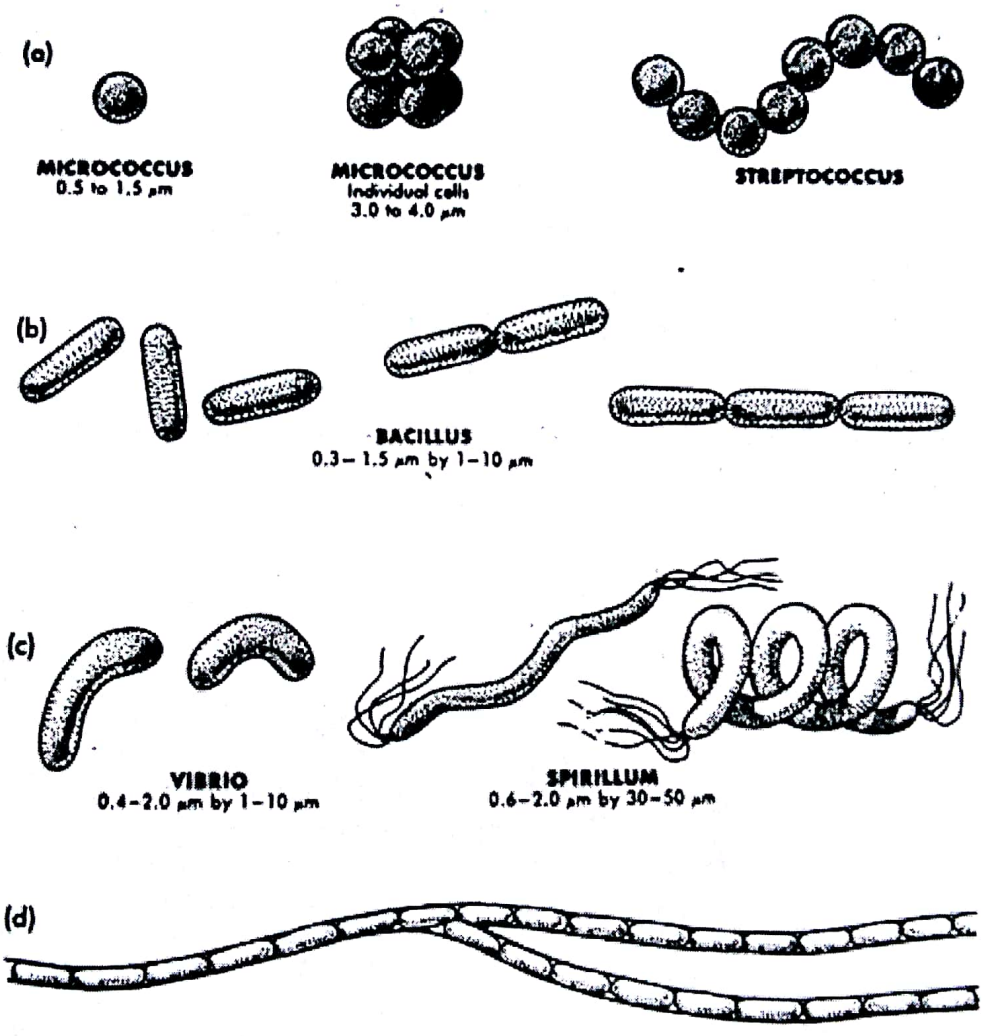


Fig.2.4 Infiltration gallery



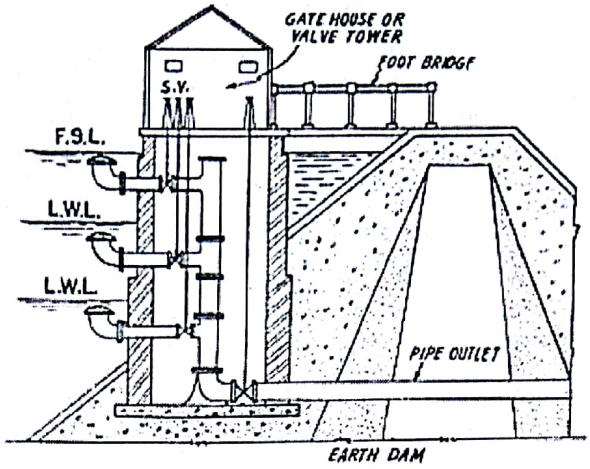


Fig.5.1 Reservoir intakes

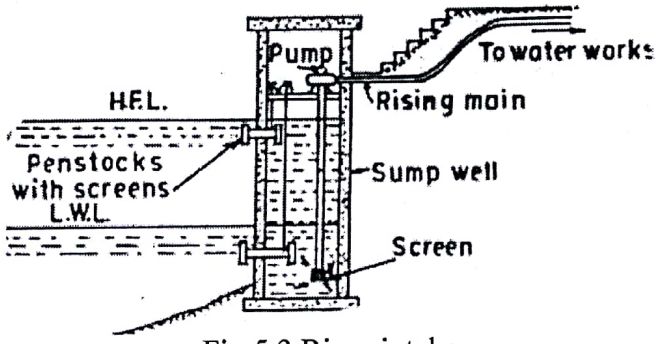


Fig.5.3 River intake

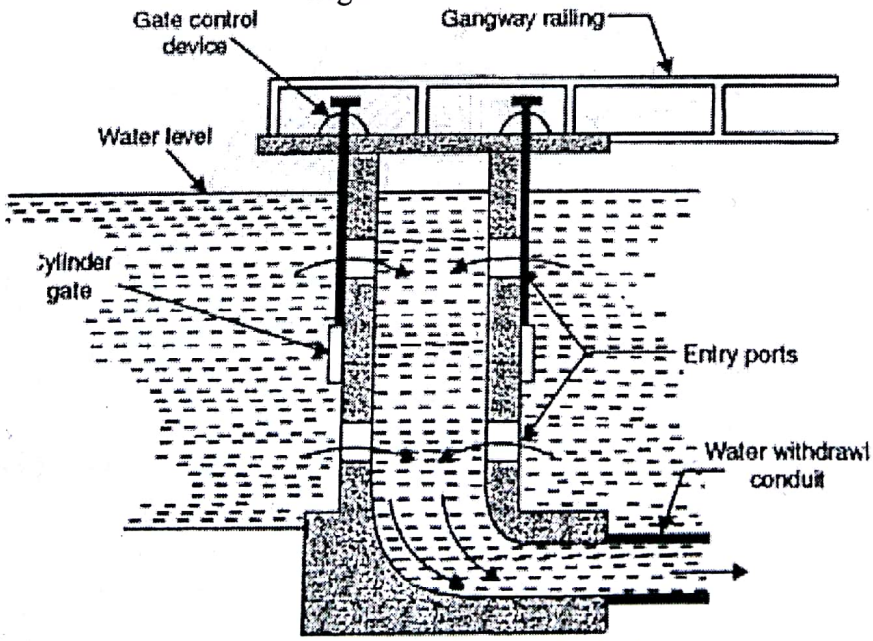


Fig.5.4 River intake (dry intake)

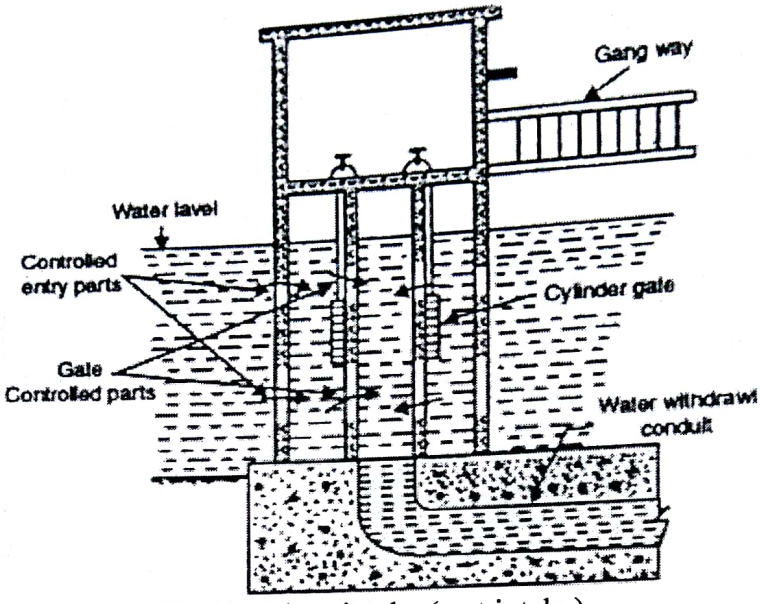


Fig.5.5 River intake (wet intake)

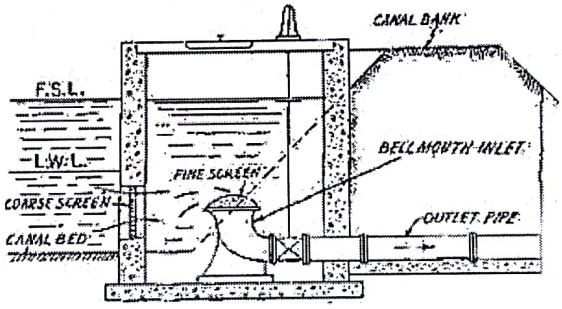


Fig.5.6 Canal intake

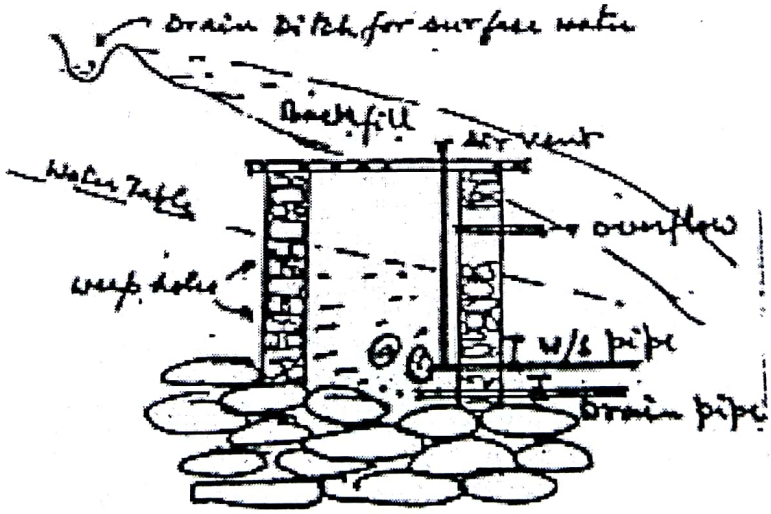


Fig.5.7 Spring intake

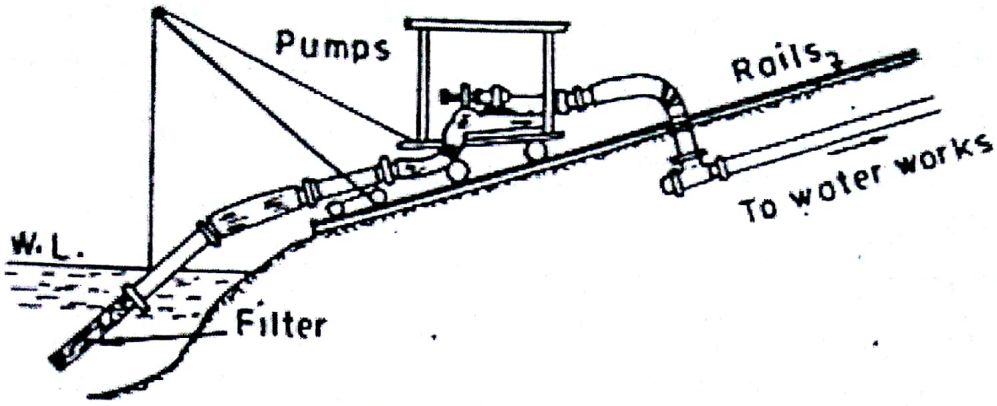


Fig.5.8 Portable intake

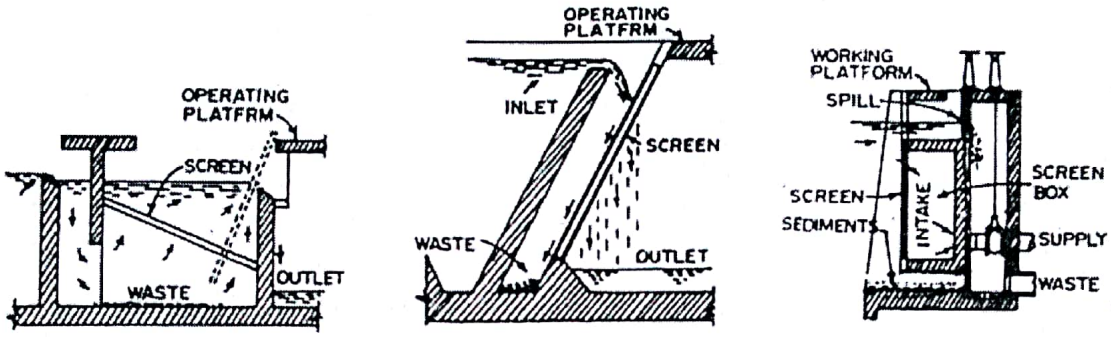


Fig.6.1 (a) Rotating screen (b) Inclined screen (c) Fixed vertical screen

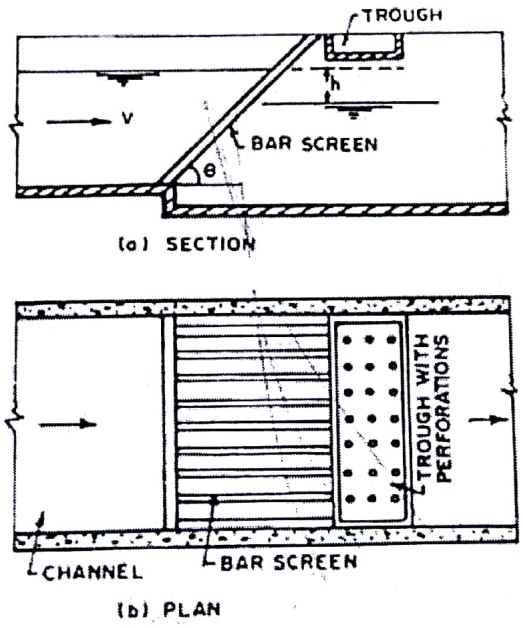


Fig.6.2 Inclined bar screen

Water quality guideline for domestic consumption

S.No.	Characteristics	Highest Desirable level	Maximum Permissible level
1	Total solids (mg/l)	500	1500
2	Total dissolved solid	500	1000
3	Color (°H)	5	50
4	pH	7-8.5	6.5-9.2
5	Temperature (°C)	4.4-10	<26, (>35 unfit)
6	Taste and odor	Unobjectionable	-
7	Turbidity (NTU)	5	10
8	Chloride (mg/l)	-	250
9	Residual free chlorine (mg/l)	-	0.2
10	Iron (mg/l)	0.3	1.0
11	Manganese (mg/l)	0.05	0.1
12	Copper (mg/l)	0.05	1.0
13	Zinc (mg/l)	3.0	15
14	Calcium (mg/l)	75	200
15	Magnesium (mg/l)	30	150
16	Sulphate (mg/l)	200	400
17	Total hardness (as $CaCO_3$) (mg/l)	100	500
18	Phenol (mg/l)	0.001	0.002
19	Nitrite (as NO_2) (mg/l)	-	<10
20	Nitrate (as NO_3) (mg/l)	10	45
21	Fluoride (mg/l)	0.5	1-1.5
22	Arsenic (mg/l)	-	0.01
23	Aluminum(mg/l)	-	0.2
24	Cadmium (mg/l)	-	0.003
25	Chromium (mg/l)	-	0.05
26	Cyanide (mg/l)	-	0.01
27	Lead (mg/l)	-	0.1
28	Mercury (mg/l)	-	0.001
29	Selenium (mg/l)	-	0.01
30	Bacteria in 100ml	-	-
31	DDT,(ppb)	-	2
32	Ammonia(mg/l)	-	1.5
33	Sodium (mg/l)	-	200
34	H_2S(mg/l)	-	0.05
35	E. coli in 100ml	-	-
36	Coliform in 100ml	-	10

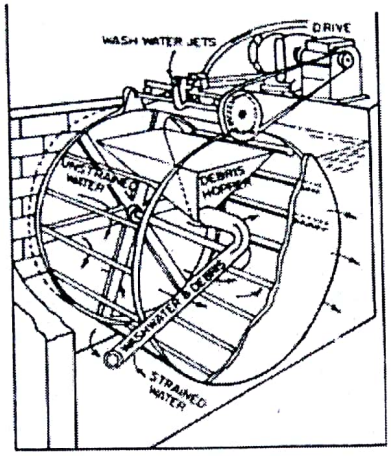


Fig.6.3 Rotary drum screen

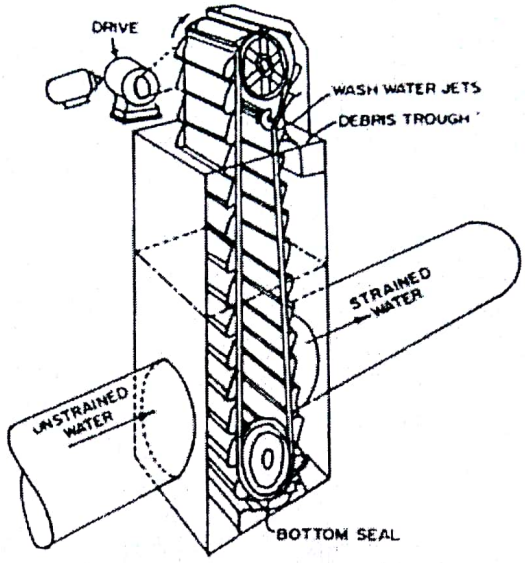
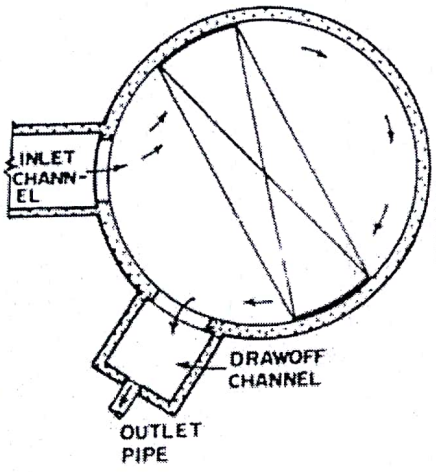


Fig.6.4 Band or traveling screen



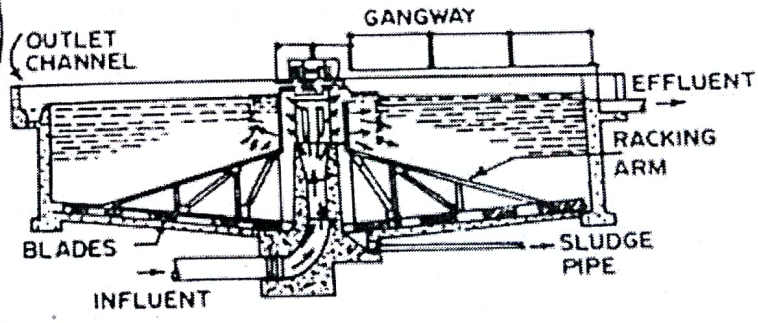


Fig.6.7 (a)Circular tank (b) Circular tank with scrapper

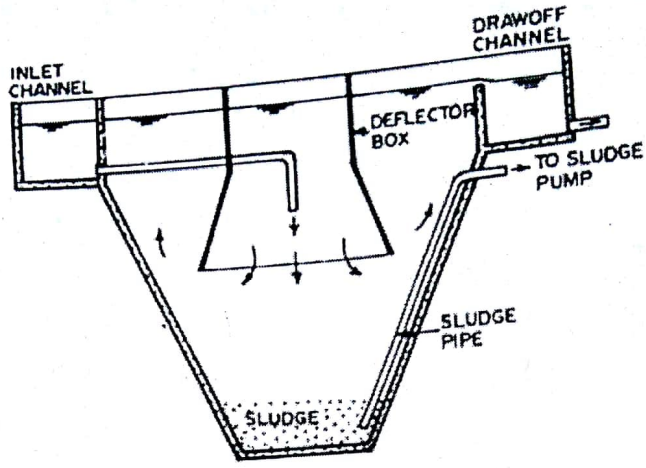


Fig.6.8 Hopper bottom tank

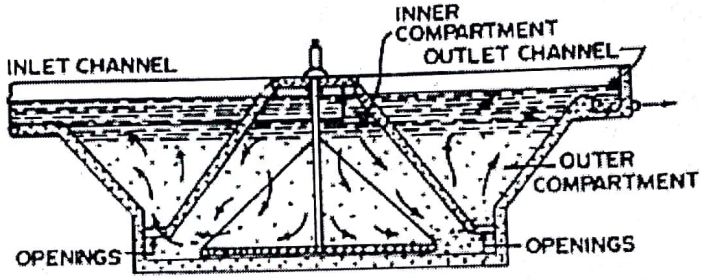


Fig.6.9 Up flow circular tank

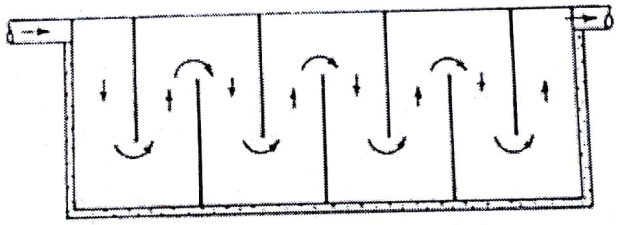


Fig.6.10 Up and down mixing

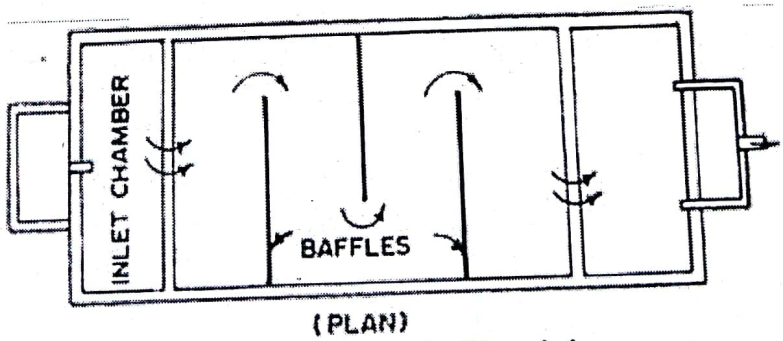


Fig.6.11 Around baffle mixing

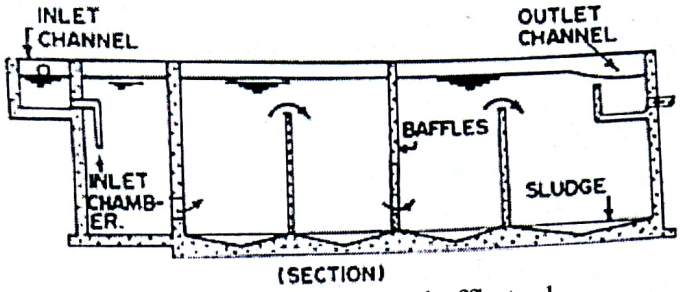


Fig.6.12 Up and down baffle tank

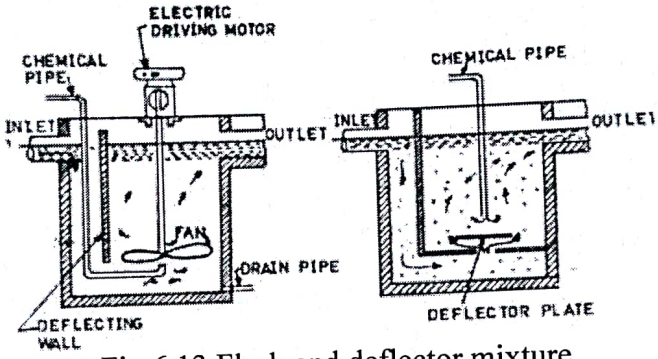


Fig.6.13 Flash and deflector mixture

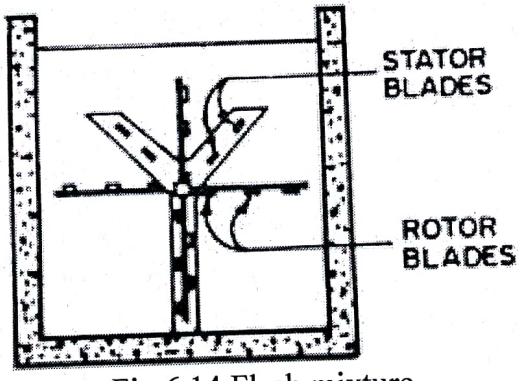


Fig.6.14 Flash mixture

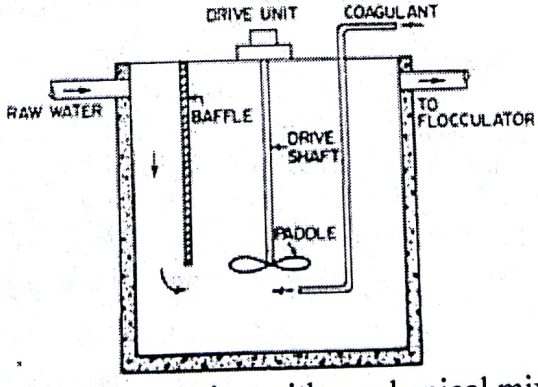


Fig.6.15 Flocculation with mechanical mixing

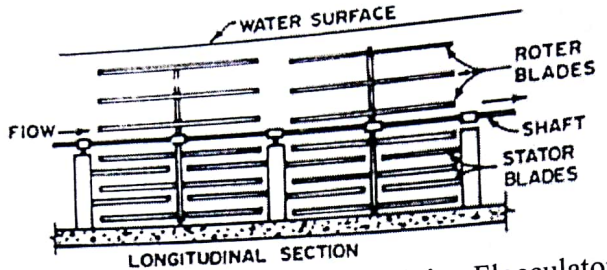


Fig.6.16 Paddle mixing Flocculator

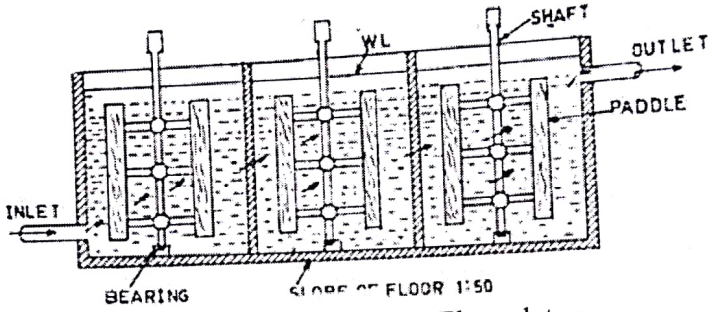


Fig.6.17 Paddle mixing Flocculator

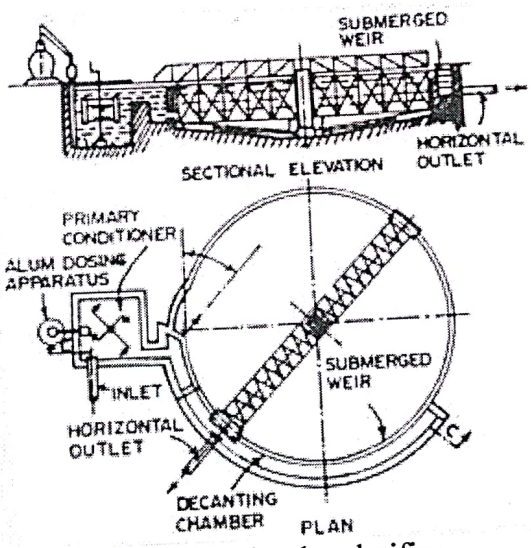


Fig.6.18 Circular clarifier

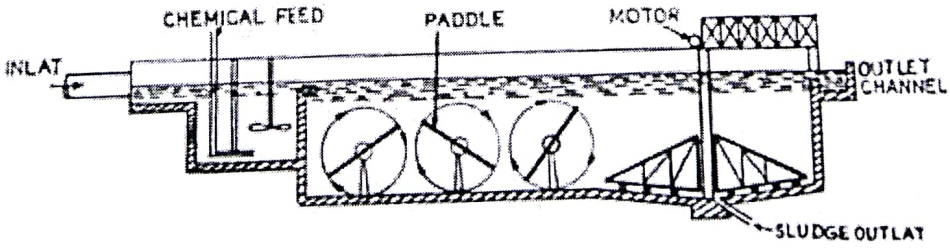


Fig.6.20 Door clarifier

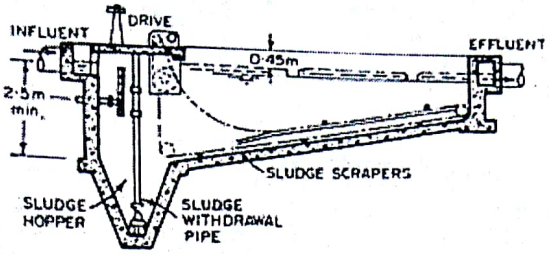
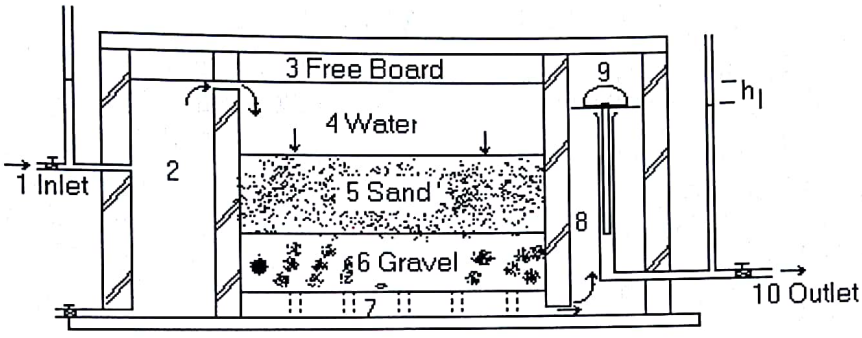
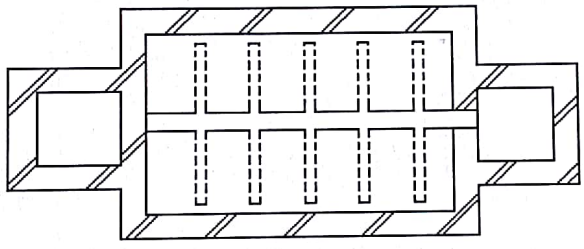


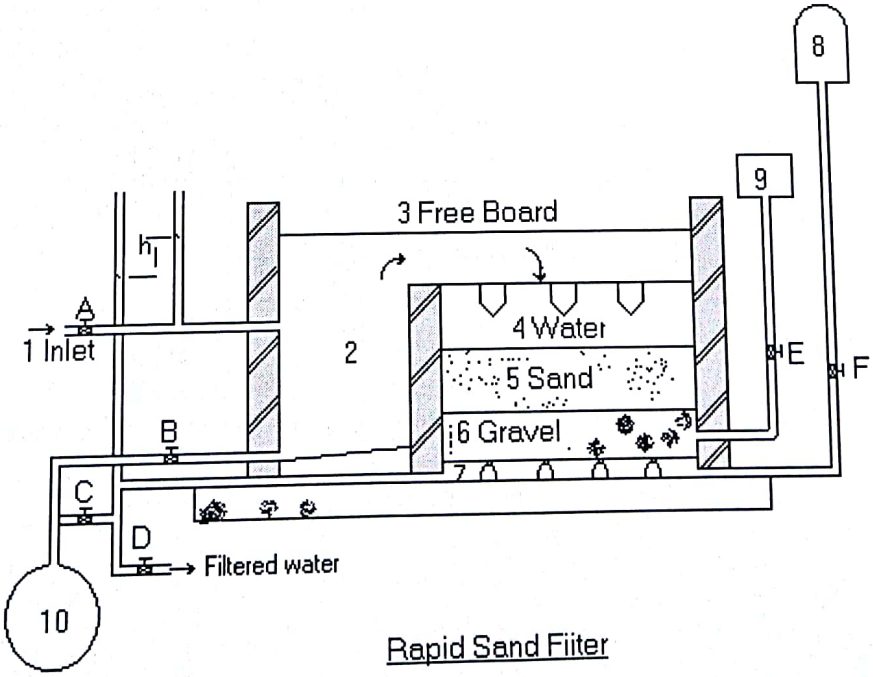
Fig.6.21 Rectangular tank with slopping bottom



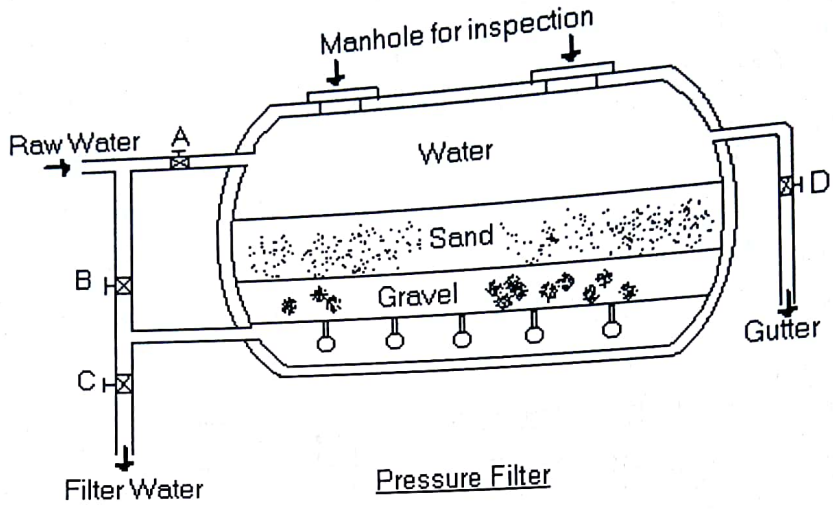
Cross-sectional elevation



PLan



Rapid Sand Fiiter



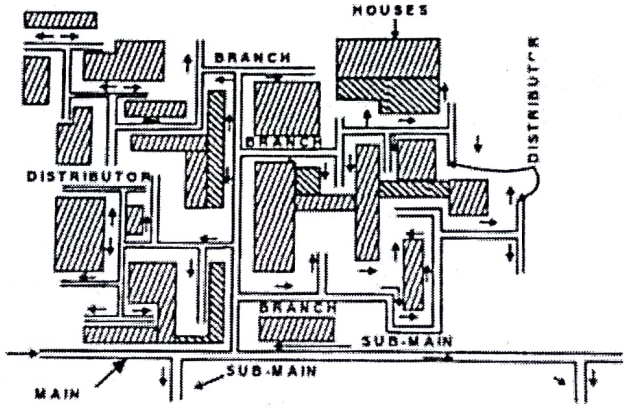


Fig. 7.1 Dead end type of distribution system

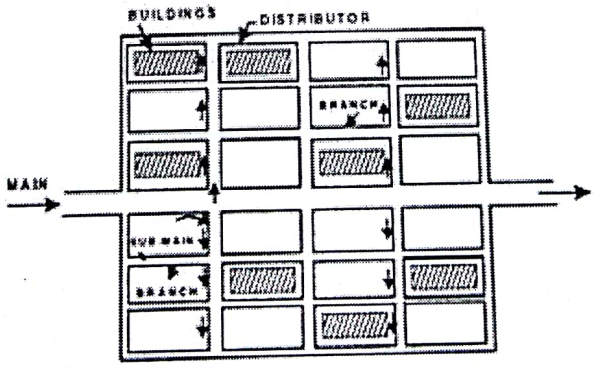


Fig. 7.2 Grid iron type of distribution system

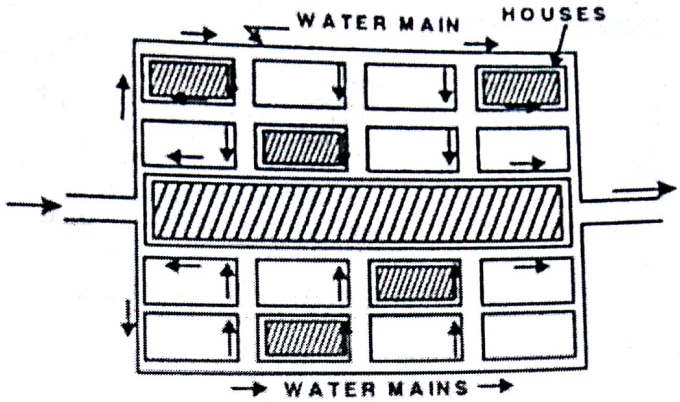


Fig. 7.3 Circular type of distribution system

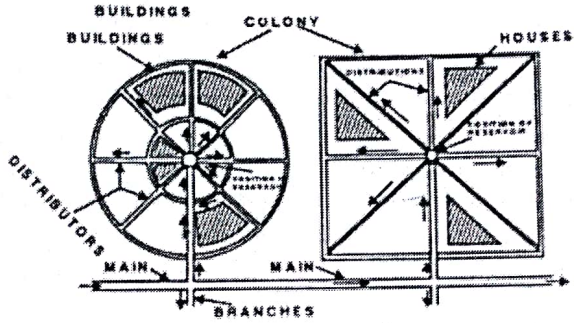
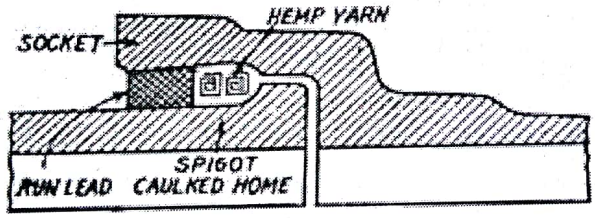
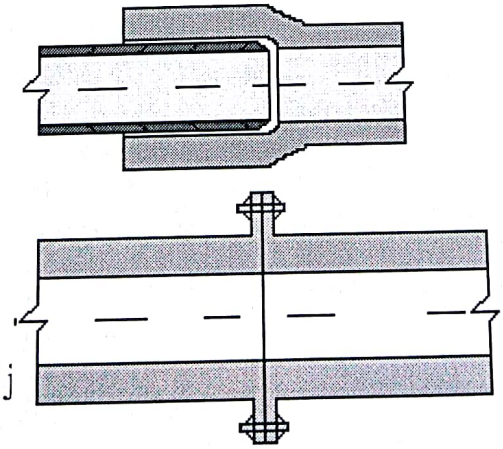


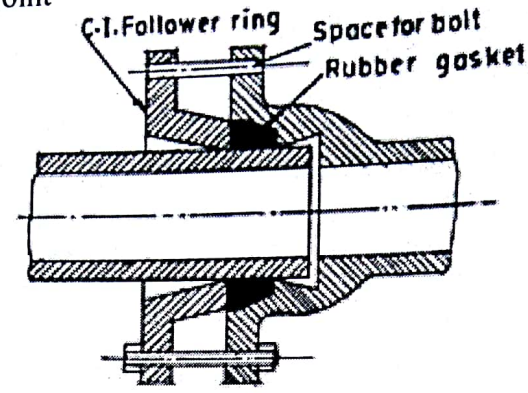
Fig. 7.4 Radial type of distribution system



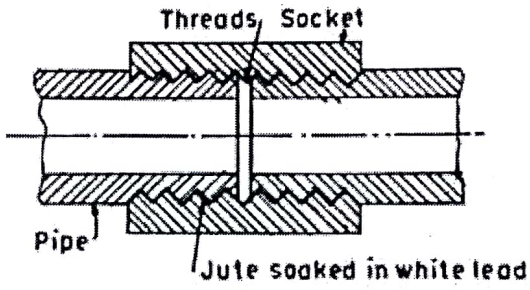


- Flanged j

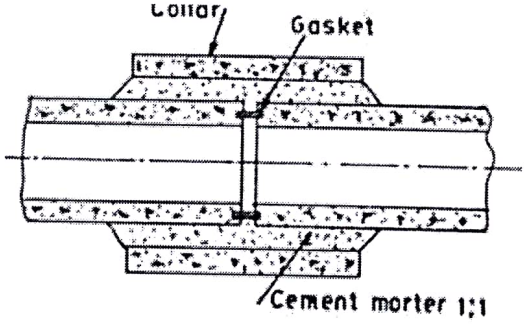
- Expansion joint



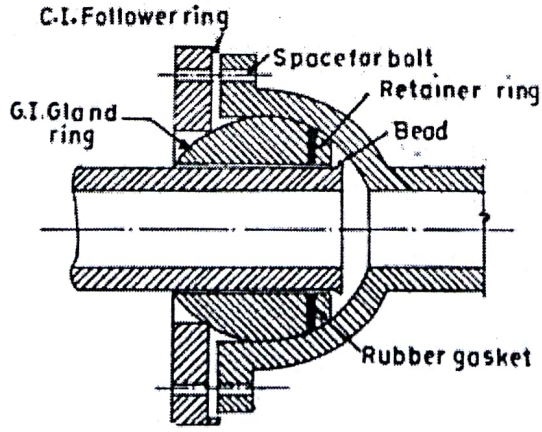
- Screwed joint or screwed socket joint



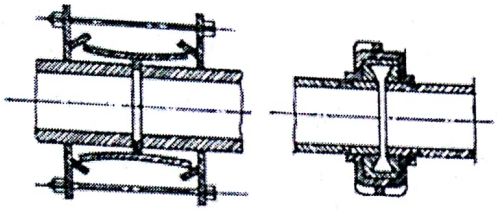
- Collar joint

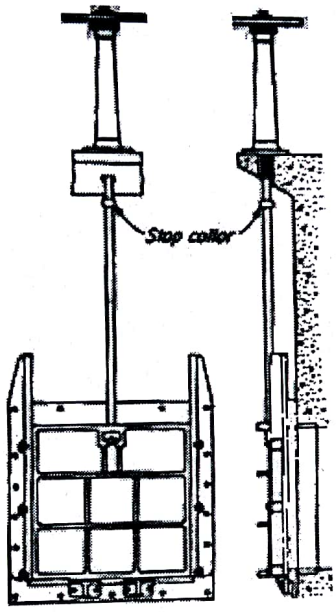


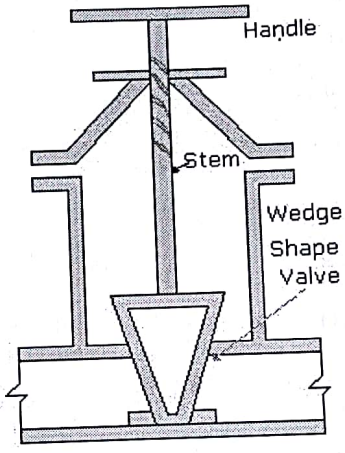
- Flexible joint

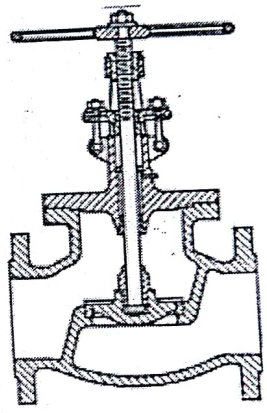


- Victaulic joint



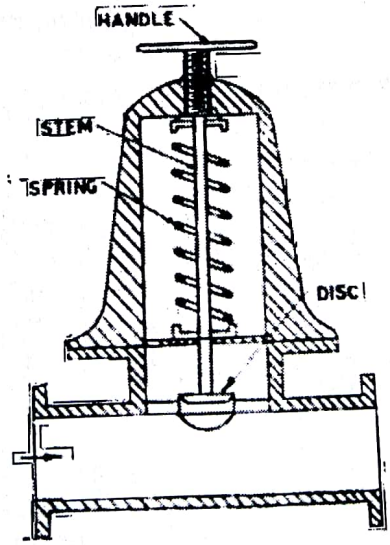




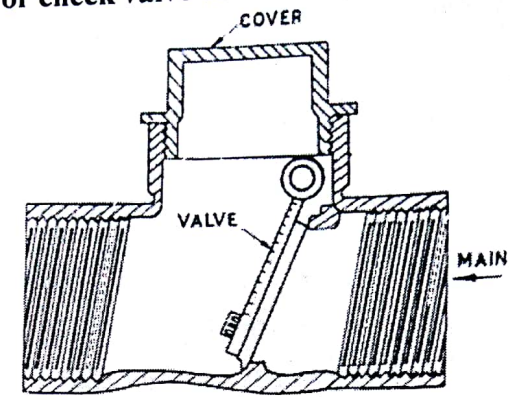


1.1.1 Pressure relief valve or safety valve

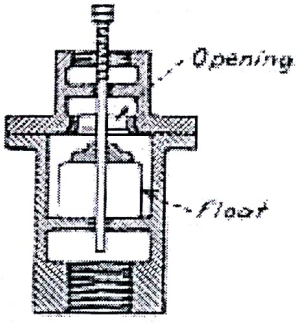
Pressure is adjusted by rotating handles.

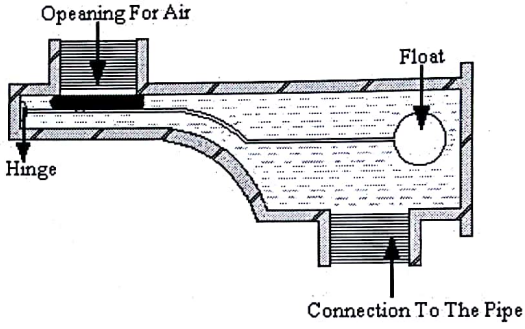


Reflux valve or check valve or non-return valve/Float valve/Ball valve

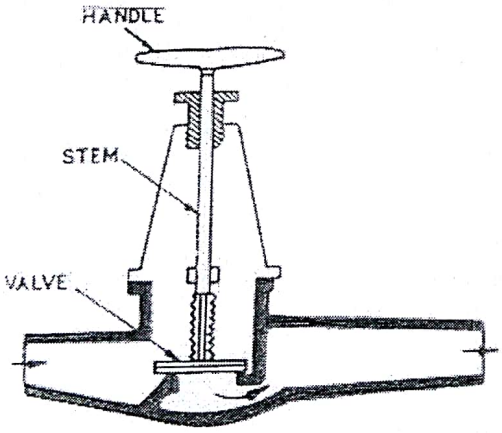


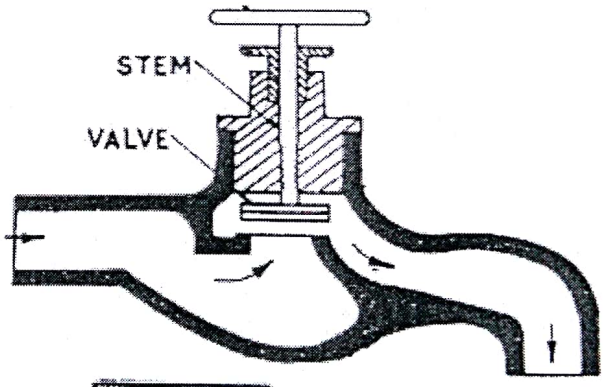
Air relief valves or air valve

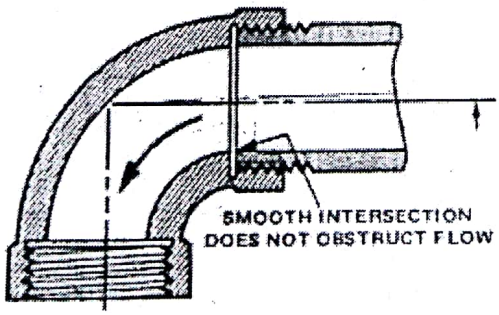


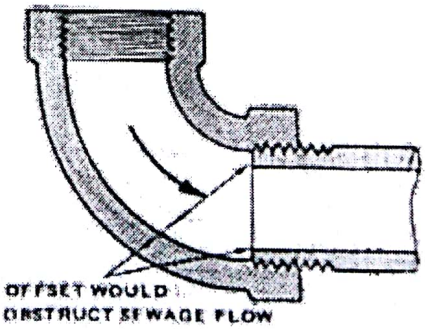


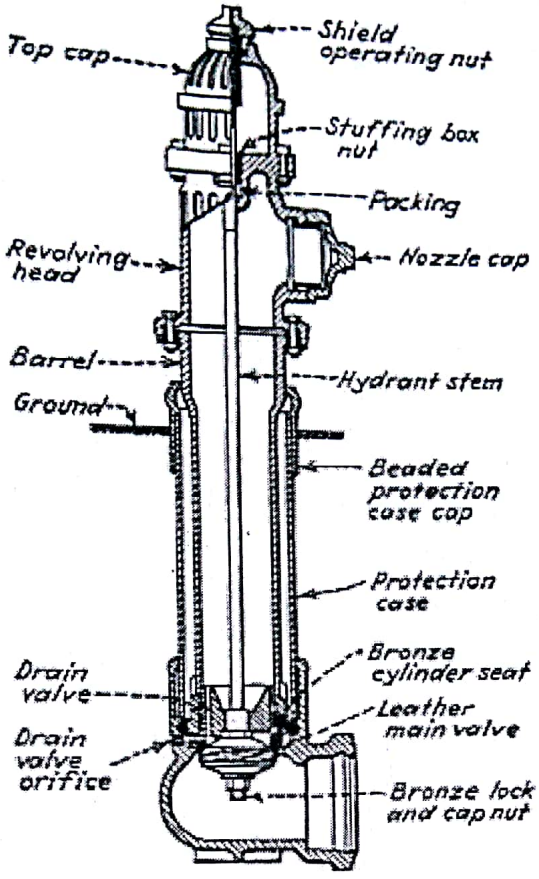
Scour valve or washout valve or blow-off valve or drain-off valve











1.2 Layout of water supply system in building