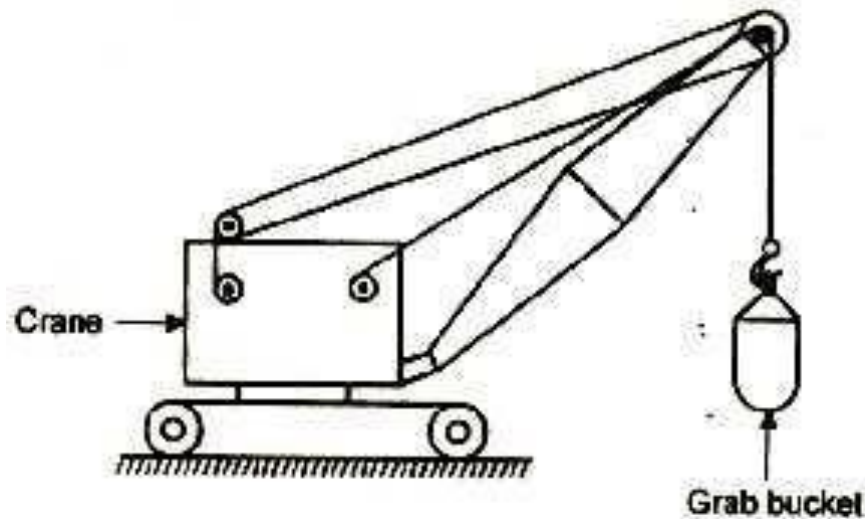


The grab bucket conveyor can be used with crane or tower as shown in figure . Although the initial cost of this system is high but operating cost is less.



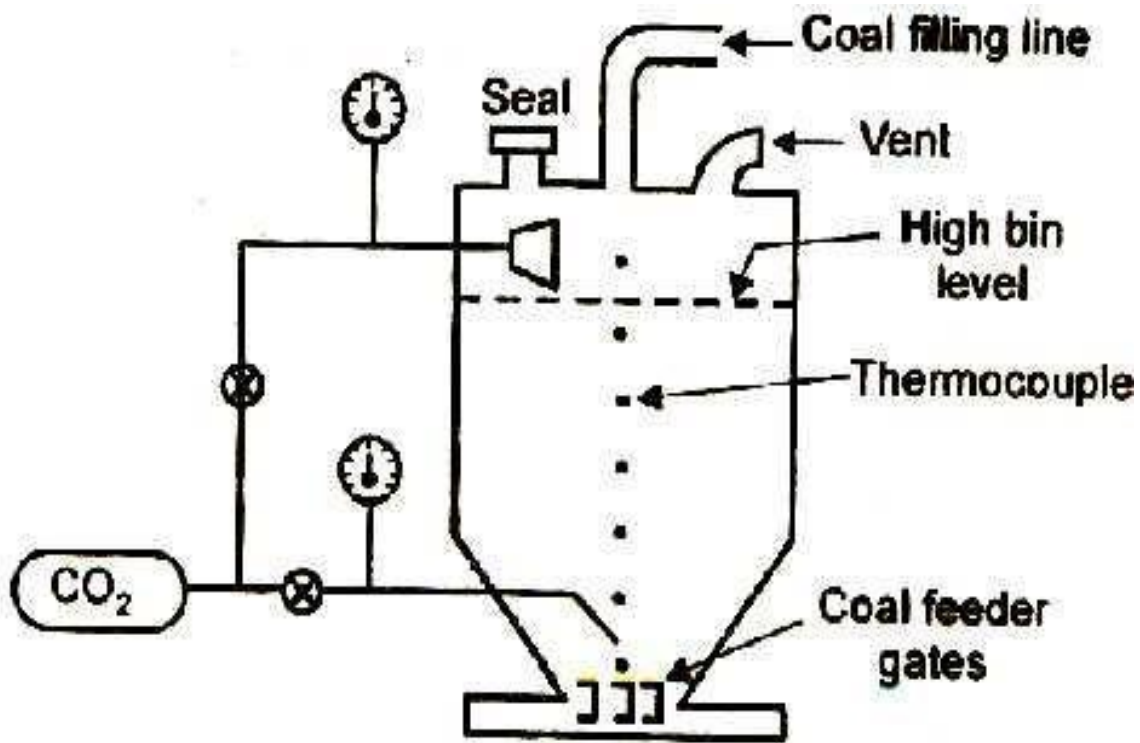
Storage of Coal

It is desirable that sufficient quantity of coal should be stored. Storage of coal gives protection against the interruption of coal supplies when there is delay in transportation of coal or due to strike in coal mines. Also when the prices are low, the coal can be purchased and stored for future use.

The amount of coal to be stored depends on the availability of space for storage, transportation facilities, the amount of coal that will whether away and nearness to coal mines of the power station. Usually coal required for one month operation of power plant is stored in case of power stations is situated at longer distance from the collieries whereas coal need for about 15 days is stored in case of power station situated near to collieries. Storage of coal for longer periods is not advantageous because it blocks the capital and results in deterioration of the quality of coal

PULVERIZED COAL STORAGE

Periodically a power plant may encounter the situation where coal must be stored for sometimes in a bunker, for instance during a plant shut down. The bunker, fires can occur in dormant pulverized coal from spontaneous heating within 6 day of loading. This time can be extended to 13 days when a blanket of CO₂ is piped into the top of the bunker. The perfect sealing of the bunker from air leakage can extend the storage time as two months or more. The coal in the bunker can be stored as long as six months by expelling air from above the coal with the use of CO₂ and then blanketing of all sources of air. A control system used for storing the pulverized fuel in bunker is shown in figure

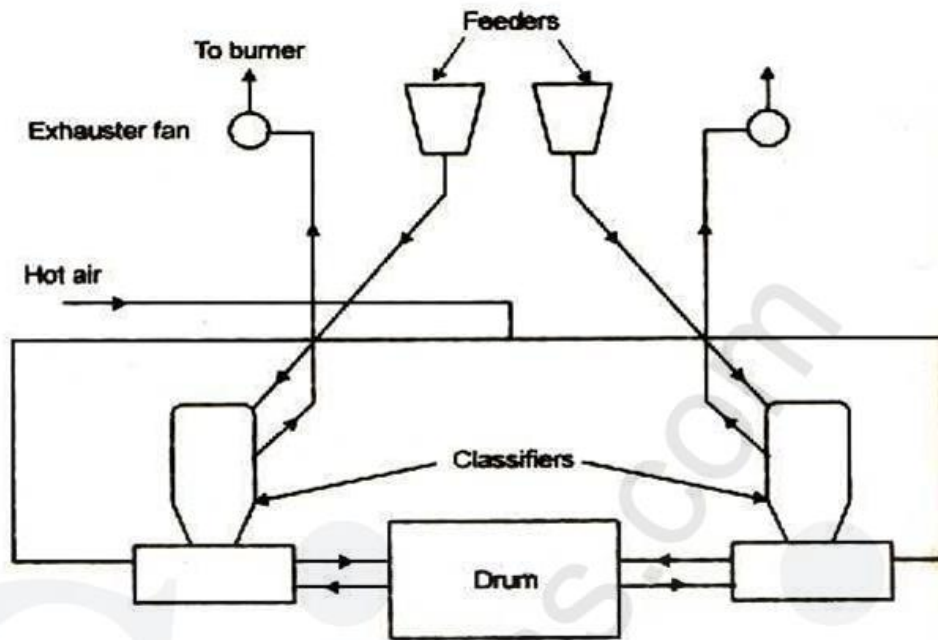


Pulverized Fuel Handling System:

Two methods are in general use to feed the pulverized fuel to the combustion chamber of the power plant. First is 'Unit System' and second is 'Central or Bin System. In unit system, each burner of the plant is fired by one or more pulverizers connected to the burners, while in the central system, the fuel is pulverized in the central plant and then distributed to each furnace with the help of high pressure air current. Each type of fuel handling system consists of crushers, magnetic separators, driers, pulverizing mills, storage bins, conveyors and feeders.

Ball Mill

A line diagram of ball mill using two classifiers is shown in figure. It consists of a slowly rotating drum which is partly filled with steel balls. Raw coal from feeders is supplied to the classifiers from where it moves to the drum by means of a screw conveyor. As the drum rotates the coal gets pulverized due to the combined impact between coal and steel balls. Hot air is introduced into the drum. The powdered coal is picked up by the air and the coal air mixture enters the classifiers, where sharp changes in the direction of the mixture throw out the oversized coal particles. The oversized particles are returned to the drum. The coal air mixture from the classifier moves to the exhauster fan and then it is supplied to the burners.



Ball And Race Mills

In this mill the coal passes between the rotating elements again and again until it has been pulverized to desired degree of fineness. The coal is crushed between two moving surfaces, namely, balls and races. The upper stationary race and lower rotating race driven by a worm and gear hold the balls between them. The raw coal supplied falls on the inner side of the races. The moving balls and races catch coal between them to crush it to a powder. The necessary force needed for crushing is applied with the help of springs.



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