

Water Lifting Traditional Methods

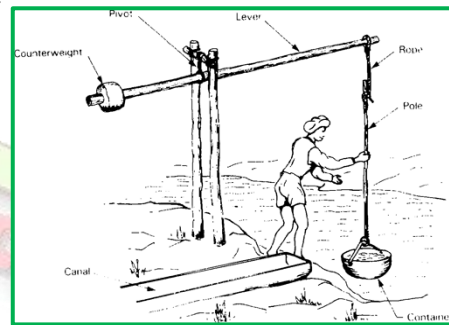
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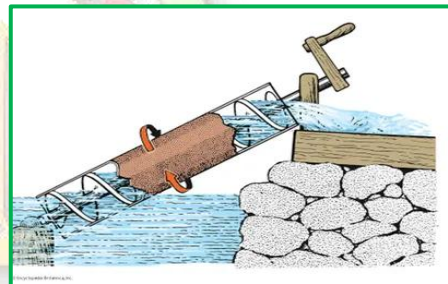
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In this article, we will explore the topic of traditional water lifting methods, with the help of human powered and animal powered.

Doon: It is based on the principle of lever. It made of wooden trough which is open at one end and closed at other. It consists of fulcrum about which trough swings. With the help of rope, the open end of the trough is connected to a hinged pole with a counter weight. By pulling the rope, the trough is lowered, the closed end is submerged in water and by releasing it returns to its original position due to counter weight. Water can be lifted from the depth of 0.8 to 1.2m



Archimedian Screw: It contains a helical screw mounted on spindle, which is rotated inside a wooden/metallic cylinder. One end is submerged in water and is placed in inclined position at 30 degrees. Rotation of the device causes the water to rise in the pipe. Water lifted from a depth of 0.6 to 1.2 m and discharge about 1600lph. It is effective for pumping sewage in waste water treatment plants.



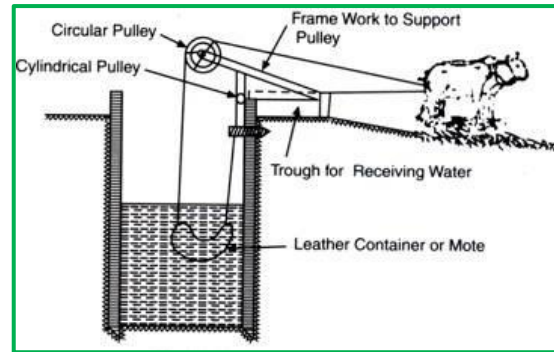
Swinging Basket: flow rate of 60 to 80 l/min are obtained. It consists of basket and ropes. Ropes are tied on both sides of basket. Two persons hold the ropes at both sides, the basket is dipped and the water is lifted by swinging it. water is lifted upto the height of 0.75m.



Persian Wheel: It is also known as rabat. Water can be lifted up to the height of 20m. it is operated usually by draught animals like bullocks, buffaloes or camels. it consists of endless chain of buckets made of G.I. sheets. The chain is mounted on drum. Drum is connected by means of horizontal axle to the toothed wheel which is held in vertical plane. A pair of bullocks or buffaloes or a camel is yoked to the shaft by means of ropes and a yoke. The bucket rotates with the help of animal power. Water is lifted continuously as long as system is kept in rotation.



Rope and Bucket Lift: In this method, the water can be lifted up to a depth of 30m. it is suitable for lined wells. It is also known as mote or charsa or pur. It consists of rope and bucket/bag/leather. The rope is attached to the bucket/bag, which passes over a pulley and fixed to the yoke of bullocks. The bullocks walk down on an earthen ramp sloped at an angle of 5-10 degrees to lift the water. About 9000 litres of water can be lifted per hour.



Conclusion

These are some of the traditional water lifting methods. These are operated with the help of man power and animal power.

References

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2. Water lifting devices <https://www.yourarticlelibrary.com/water/wells/methods-of-lifting-water-using-manpower-6-methods/61062>