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Specification

Title

Water Turbine

1. Character and Objectives of the Invention

A. General Character

This turbine invention has as its major character as an invention, to make apertures between each impeller have a basketlike shape to store water, there is also a water pump to pump water from a storage well to drive the turbine. This invention which requires each impeller to have a basketlike shape, can be invented by using steel sheets welded to cover two sides of each impeller. Each aperture between impellers must have a basketlike shape. Each impeller becomes a side of the turbine's walls and lines up through the outside of the turbine frame. The turbine frame will be the bottom side of the basketlike impeller that enables it to store water. To hold impellers within the turbine frame at the right angle of inclination will make the impellers' sides have a trapezoid shape. The bottom of the impeller is deep enough to store more water. The end of the turbine impellers forms the mouth of the basket and has a wide rectangular shape mouth which draws more water, faster. The mouths of the basketlike impellers will tip up when they move up to the highest level. The mouths will turn upside down when they move to the lowest level. Water will run down into the basket when the basketlike impellers move to the lowest point to empty these basketlike impellers. At the centre of the turbine frame, there is a shaft tightly fixed to the turbine frame centre. When the turbine spins around, the shaft will also turn around. The turbine frame has a spherical cylinder shape and has a long shaft extending beyond the turbine frame for bearing placements. The extended horizontal shaft

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will hold bearings tightly with the racers and will be parallel with the water level. The shaft can spin around by itself nimbly and freely. When the water pump begins to work, water will be pumped from the water storage well, run along the cylinder upto the highest point of the water turbine, then the water will be released down into the bottom of the basketlike impellers. This action will make the turbine lose its balance and the impeller inturn moves lower down. The next basketlike impeller will move in replace of the previous one to take water into its basket. If the impeller moves lower, the water will run off its basket mouth, the inventor therefore, must make their walls with a suitable curve to fit the impellers' ends to stop the water from running off. When the basketlike impellers reach the lowest point, the mouths of the basketlike impellers will turn upside down. The length of the curved walls finish here to allow the water to run off from the basket mouths and gather in the water storage well beside the curved walls. The curved walls must be made in the shape of wing panels to hold the turbine's sides perfectly and constantly rigid with the curves of the walls. The wings also can be used as water stoppers to stop the water from running off at the turbinesides.

B. Components

The invention of the water turbine is made up of necessary components that work in co-ordination with each other and have objectives for this invention as follows :-

(1) Basketlike Impellers in the Turbine : These components have the objective to receive water from the water pump and also help store as much water as possible in the basketlike impellers when they move to the highest point on the top of the turbine. The water will be stored inside the baskets until they move down to the lowest point, then the baskets will overturn. The water will run off to empty the baskets.

(2) Spherical Cylinder Shaped Turbine Frame : The objectives for this component are to hold the impellers' blades at the outside, horizontally and with the same distance of aperture. The spherical

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cylinder shaped turbine frame will be held on where it is fixed onto a shaft at the centre of the turbine frame.

(3) Turbineshaft : The objectives of this component are to hold onto the spherical cylinder shaped turbine frame, handling the moving force of the turbine and deploying rotational force to the turbine for use in all kinds of applications. The turbine shaft was invented to work horizontally and parallel with the water level.

(4) Bearings : The objectives of these components are for handling the weight of the turbineshaft, its spherical cylinder shaped turbine frame, and basketlike impellers, including water weight inside the baskets of the whole impeller set to enable them to spin around nimbly and freely. These 2 sets of bearings will be positioned at the two ends of the shaft to hold the bearings' inner races tightly.

(5) Bearing Races : The objectives for these components are for mounting the bearings, including the whole set of turbine impellers. The races were invented to hold the turbine shaft in a horizontal and parallel plane with the water level. The races are set perpendicular to the shaft.

(6) Curved Walls : This component has an objective to prevent the water from running off the basketlike impellers when they rotate downward from the water receiving point. The curved walls and the baskets are not attached to each others but they are separated into different parts. The curve begins from the highest point of the turbine and stop at the lowest point of the turbine. The size of the curve is perfectly angled to fit the end of the turbine impellers so that they are neither adjoining or have friction with each other. The impellers also should not be so far from each other that the water leaks out. When the baskets rotate to the ending point of the curved walls, the basket mouths are turned upside down so there is nothing stopping the water. The water will run off the baskets until the baskets are empty. Two sides of the curved walls are designed as wings for holding the exact curve permanently and to block the water running off the sides of the impellers.

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(7) Water Pump : The objectives of this component are for pumping water from the water storage well along the pipe upto the highest point of the turbine and release the water to the mouth of the baskets, therefore water will be stored in the basketlike turbine impellers.

(8) Water Storage Well : The objective of the water storage well is to store water for pumping alternately whenever the turbine is spinning in the water storage well and rotation of water pumping is required. The water storage well is the safest way for water use during turbine spinning.

C. Principle of Work

Before this invented water turbine can spin, it must be turned on at the water pump. When the water pump starts to work, the water in the water storage well will be pumped along the pipe upto the highest point of the turbine. Then the water will be drained off from the pipe into the mouths of the basketlike impellers. The water will be stored inside the baskets. When the basketlike impellers have the water stores inside, the weight of the water will make the turbine lose its balance and the basketlike impellers will rotate downward. The next basketlike impeller will move up in its place. This will happen continuously all the time while the water pump is working. When we don't want the water turbine to spin, we must turn off its water pump then the turbine will stop.

D. The Purposes of the Invention

The purposes of the invention of this turbine are for using water that we are able to provide for the spinning of the turbine without relying on natural reservoirs. This invented water turbine, therefore, can be used everywhere without worrying about water shortage, because it requires a smaller water storage well and a lesser quantity of water for circulation. Even though the turbine is

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working all the time, the water will not run dry from the storage well with this water circulation system.

2. Branches of Knowledge Relevant to the Invention

This invention was categorised within a branch of the subject of Engineering in the area concerning water turbine technology and the sub-branch of Mechanical Engineering.

3. Background or Relevant Subjects

The spinning of the water turbine is the use of hydroelectric power to drive the turbine around on its shaft. The use of water from natural sources such as; water from canals, reservoirs and water from other sources. Quantity of water available is uncertain, for it depends on the seasons and climate. In the rainy season of any year where there is a lot of rain fall, it may create a strong tide. The strong tide can cause a lot of damage to all the equipment. Any year that receives less rain fall, results in water in canals running dry and no water for turbine operation. In places where geographical features of the places are poor, where there are no water sources such as, canals. In these places we can neither use the water turbine or make water turbines which work in conjunction with natural water sources, it is difficult because the quantity of rain fall within the whole year is unequal. This causes an inefficiency in the use of the water turbine .

The building of the water storage well and use of a water pump is a solution to enable the turbine to spin. This solution also provides us with total non-reliance on nature. All water turbines, water pumps and water storage wells can be built in sufficient size for use and for their co-ordination in various works without limitations. Whenever we want the turbine to spin or turn it off we can do it as we want. Water for circulated pumping may result in loses to a small degree from evaporation and spill off while the turbine is working. With this principle of works, the cycle action is regulated because the

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water which runs off from the pipe has a regulated rate . This results in efficient spinning of the invented water turbine and regulated flows as well.

4. An Explanation for the Water Well Diagrams

Diagrams 1 and 2 illustrate the front and the sides of the invented water turbine (1) water storage well (2) electric motor (3) water pump (4) water pipe (5) water suction into the pump (6) water draining pipe (7) curved walls to stop water (8) turbine impeller (9) basketlike apertures between impellers (10) water from the pump flows to be stored in the basketlike aperture between the impellers (11) turbine shaft, bearings to handle the head of the turbine shaft (12) the bearing races for the head of the turbine shaft (13) the spherical cylinder shaped turbine frame.

5. The Complete Disclosure of the Invention

This invented water turbine is comprised of 4 important parts that work in relation with each other efficiently, as follows :-

A. The turbine which is composed of turbine impellers (8), the spherical cylinder shaped steel frame (14), bearings (18), and bearing races (13). The functions of these aforesaid parts have different functions from each other and will relate to each other as follows : the turbine impellers (8) which are fixed in line at the outside at the angle of inclination to the spherical cylinder shaped turbine frame (14), each turbine impeller is located a specified distance from each other. The impellers are aligned horizontally and parallel with water level at the sides of the impellers. The mouths of each aperture between impellers are welded with iron to close them and are transformed into basketlike impellers. Each impeller is transformed into a joint wall for the next basket. The spherical cylinder shaped steel frame (14) is transformed into the bottom of the basket. When we look at the side views of the turbine this part has a trapezoid shape. The mouths of these baskets are situated at the end of the

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turbine in a rectangular shape. The mouths are open wide enough to allow water flow to be stored within the baskets(9). The spherical cylinder shaped turbine frame was invented to work in a horizontal plane and was fixed on the turbine shaft (11) at the centre of the turbine frame (14). The two ends of the shaft extend beyond the turbine frame for capping with bearings (12). The bearings are fixed permanently on the inner bearing race (13). The races, when fixed with two sets of bearings, allows the turbine shaft to lie horizontally and parallel with the water level. The race (13) is in a 90 degree angle to the turbine shaft (11). The turbine shaft can spin nimbly and freely.

B. The curved wall water stopper (7) was invented to have the correct curve fit for the end of the turbine impellers (8) and are not too close to the end of the impellers (8) which causes friction and are not too far away that water leaks. The top section allows the water flow to run off into the baskets(9). When the curved wall ends below, there is a hole to allow water flow from the baskets. When the mouths of the baskets rotate downward to the lowest point, the mouths will overturn. The water will run off the mouths until the baskets are empty. The curved wall was invented to have wings at its sides to hold the fixed curve and stop the water from running off at the sides of the turbine as well.

C. The water pump and pipe : when charging electrical power into the motor(2). The motor inturn will spin and drive the water pump (3) and spin with the motor. The water in the storage well (1) will be pumped to flow along the suction pipe (5) passing the water pump (3) upto the water pipe (4) and run off the water pipe (4) into the baskets (10). When the baskets are filled with water, the weight of the water imbalances the turbine. The weight makes the baskets move downward. The next basket will move up in its place to receive water and rotate around alternately, which is the spinning of the water turbine. When the mouths of the baskets rotate to the lowest point, the mouths of the baskets will turn over and in the mean while will reach the end of the invented curved wall water stopper. The water will run off the basket (9) until empty. After that the water will flow along the water draining pipe (6) and return back to the water

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storage well (1). This function will circulate water in the same manner as this continuously.

D. The water storage well (1) was invented to store an amount of water sufficient for pumping to drive the turbine impellers.

The efficiency of these aforesaid parts, if they are invented neatly, and precisely to allow each part's size to correlate to the others. All parts will work very well together. The turbine will spin nimbly, freely and have sufficient power for use in industrial factories.

6. The Best Method of Invention

The best method of invention is the same as the complete disclosure of the invention item.

7. The Use of the Invention in Industrial, Handicraft, Agricultural or Commercial Fields

An Industrial Field :

This invention is able to be adapted for industrialised use.

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Claims

1. Procedures and working system of this invented water turbine ; the whole system composes the water turbine which was invented to have aperture between each impeller to provide a basketlike shape to store water. The method for spinning the turbine, uses water pumping application. The pump will pump water from the water storage well to spin the turbine. At the end of the impeller lies stored water in its basket, for it has a curved wall to hold the water.
2. The invention has made the turbine impellers fixed to the turbine frame at a precise angle of inclination and then welded to close both sides of each impeller. The apertures of the impellers then are transformed to be a basket for water storage.
3. The curved wall was invented with the correct curve fit for the end of the impellers to stop water running from the basket. The sides of the curved walls were invented with wings to keep the curve permanently rigid. In addition to this, the fixed wing also provides another function as a water stopper to stop the water flowing off from both sides of the impellers.
4. The invention has a water storage well and a water pump for water pumping circularly from the well to drive the impellers to spin the turbine.
5. The method to bring water from the water storage well to spin the turbine by pumping; with the water pump.

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