

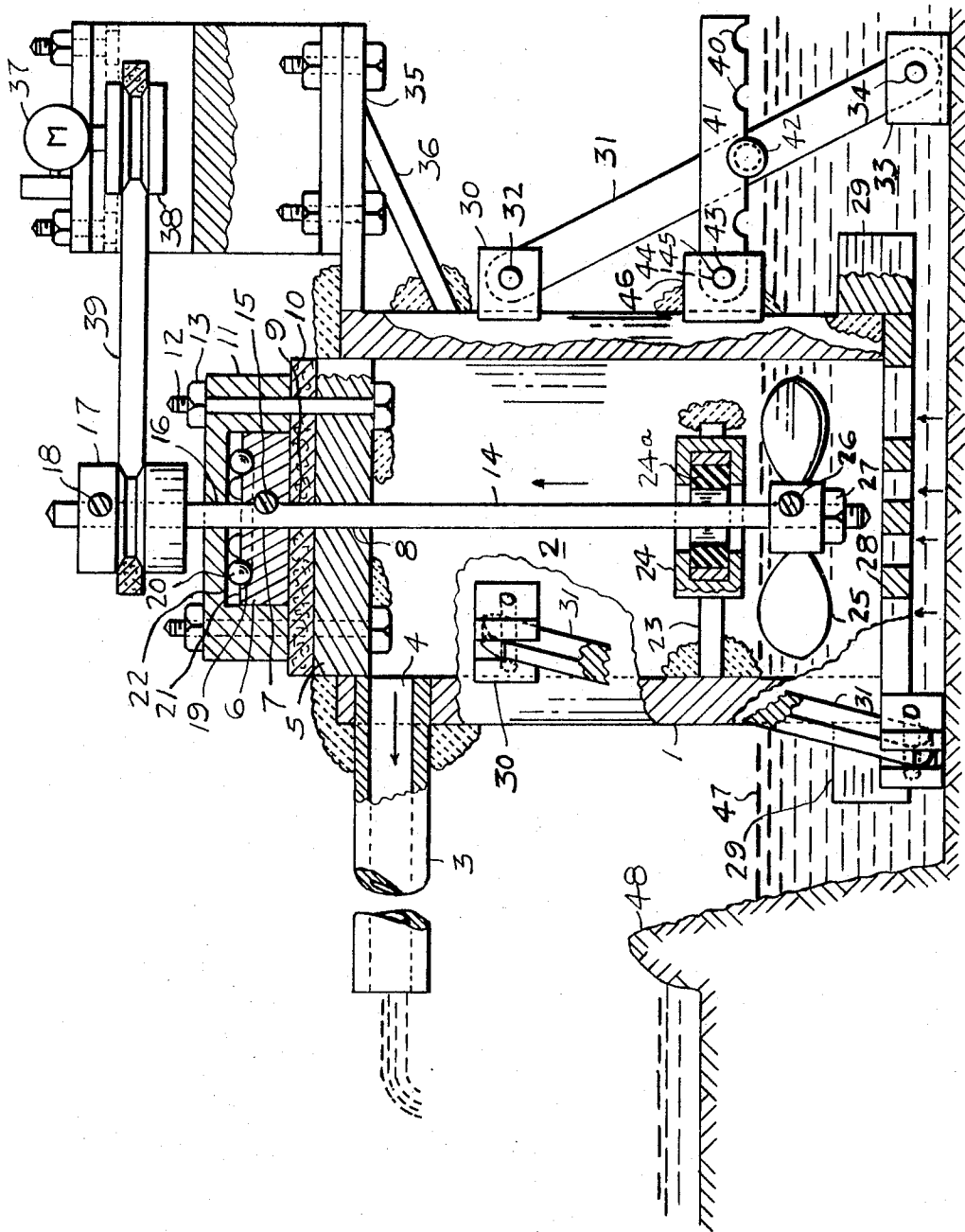
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FLUID PUMP

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FLUID PUMP

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This invention relates to new and useful improvements in a fluid pump with motor attached and is particularly adapted to be used in irrigation of lands, such as water irrigation of growing crops such as rice or the like.

An object of the invention is to provide a fluid pump and attached motor of the character described which is of extreme light weight and is portable from place to place manually by a single person.

Another object of the invention is to provide a fluid pump and attached motor of the character described although of extremely light weight which has great capacity in the output of volume of water in proportion to its weight.

A further object of the invention is to provide a fluid pump of the character described which has legs pivotally attached to the vertical intake pipe with pivotally attached feet to the lower ends of said legs for supporting and keeping the vertical intake pipe and motor or power means thereabove in balanced upright position.

A still further object of the invention is to provide a fluid pump and attached motor of the character described which has one of the pivotal legs attached to the vertical intake pipe opposed to the discharge pipe attached to and in communication with the vertical intake pipe.

A still further object of the invention is to provide a fluid pump and attached motor of the character described which has power motor attached to the upper portion of the intake pipe and mounted in offset position with respect to the top of said vertical intake pipe and positioned over one of the pivotally connected supporting legs and opposed to the discharge pipe attached to the opposite side of said vertical intake pipe to comprise a balanced power and pump unit.

A still further object of the invention is to provide a fluid pump and attached motor of the character described which has fins circumferentially spaced and preferably attached to the lower outer sides of the vertical intake pipe and extending outwardly therefrom to prevent whirlpool motion of the water at the bottom of the intake pipe so that upon rotation of the propeller blades positioned within the lower end of the intake pipe a full supply of water to which the propeller has access will remain at the bottom of the intake pipe in order that the propeller blades have a full supply of water to pick up and deliver upwardly through the intake pipe and out through the discharge pipe attached horizontally to the top of the intake pipe and in communication therewith.

These and other objects of the invention are in part obvious and will in part be more fully disclosed in the specification, one embodiment of which is illustrated in the accompanying drawing, in which:

The figure is a side view partly sectional of the fluid pump with attached motor delivering fluid water from the discharge pipe over a levee to a section of land of higher ground elevation with the lower end of the vertical intake pipe submerged in fluid water in an adjoining section of land of lower ground elevation.

The invention will be better understood from a detailed description thereof reference being had to the accompanying drawing in which like numerals herein denote like numerals therein. The numeral 1 denotes a vertical intake pipe with hole 2 therethrough to which is attached near the upper end thereof a horizontally disposed discharge pipe 3 with hole 4 therein which is in communication with hole 2 of said vertical intake pipe.

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A plate top 5 is welded or attached to the top of said intake pipe 1 on which an antifrictional turn table 6 is mounted having propeller shaft 14 extending through hole 7 in said turn table 6 and through hole 8 in said plate top 5 and through hole 9 of the sealing gasket 10 which is intermediate of said turn table 6 and said plate top 5. The above assembly is held in place by turn table housing 11 superimposed and mounted over said turn table 6 with bolts 12 extending through bolt holes in plate top 5 gasket 10 housing 11 and tightened by nuts 13 threadedly secured to the top of the threaded ends of said bolts 12. Said vertical propeller shaft 14 is connected to said turn table 6 by means of pin 15 and the upper end of said propeller shaft 14 extends through hole 16 in housing 11 with pulley 17 connected to said shaft 14 by pin 18. A circular ball bearing race 19 is provided in the upper face 21 of the turn table 6 with ball bearings 20 running free in said race 19 and may bear against the under face 22 of the housing 11.

The ends of three circumferentially spaced horizontally braces 23 are welded to a collar 24. Propeller shaft 14 is journaled through rubber bearing 24a mounted inside collar 24 through which the shaft 14 turns when rotated by power source hereinafter described. A propeller 25 preferably with 2 blades is secured to the lower end of shaft 14 by pin 26 and nut 27 threadedly connected to the threaded lower end of said shaft 14. A strainer 28 is attached to the lower end of the vertical intake pipe 1 to keep debris from entering the intake pipe which might foul up the propeller 25.

Fins 29 preferably 4 in number are spaced circumferentially around and attached to the outer wall of intake pipe 1 near the bottom thereof and extend outwardly therefrom a sufficient distance to prevent whirlpool in the water which is created without the fins by movement of the water in response to the rotation of the propeller 25. Without these fins 29 it has been found that a whirlpool in the water occurs which keeps the propeller 25 from picking up a full load of water fluid through strainer 28 and delivering the full load up through the hole 2 of the intake pipe 1 and thence forced through hole 4 of the discharge pipe 3 as indicated by arrows, and, discharged from discharge pipe 3 in the most efficient rate of flow. This fins construction and arrangement with reference to the lower end of the intake pipe and the propeller inside the intake pipe near the lower end thereof greatly increases the efficiency in picking up the water by the propeller blades.

Furcated lugs 30 (three in number) are circumferentially spaced around and welded to the outer periphery of the intake pipe 1 well upon the outside thereof and substantially above the midway height of the intake pipe 1 to which is pivotally pinned the upper end of a leg 31 to each of said lugs 30 by pivot pins 32. The lower ends of said legs 31 (three in number) are provided with feet 33 (three in number) which are pivotally connected thereto by pivot pins 34 so that when the lower ends of said legs 31 are extended outwardly from the bottom of the vertical intake pipe 1 the feet 33 will adjust to the ground which may be uneven in order to support the intake pipe 1 and motor M mounted thereon in substantially vertical position.

A table 35 with brace 36 is welded to the intake pipe 1 near the upper end thereof to support a motor M, preferably a self sufficient power source such as gasoline powered motor 37 with attached pulley 38 in matching relationship to pulley 17 which is connected to the upper end of the propeller shaft 14. A V-shaped endless pulley belt 39 is fitted around the pulley 38 of the motor 37 and around pulley 17 of the propeller shaft 14 in order that rotation of the pulley 38 by motor 37 will impart

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rotation to said propeller shaft 14 to rotate same and the propeller 25 attached to the lower end of said shaft 14. The motor 37 is preferably mounted on table 35 centrally over one of the legs 31 and directly opposite to the discharge pipe 3. The stability of the combined unit pump and motor mounted thereon depends upon such positioning of the motor directly over one of the legs 31, as well as, being opposed to the discharge pipe 3 to balance and keep the combined unit upright against opposing forces. For example, the forces of the pull by the motor 37 through belt 39 on shaft 14 and propeller 25 and the back resistance from the discharged fluid being discharged through discharge pipe 3 which is offset and counteracted by one of the legs 31 being directly opposed to discharge pipe 3 and directly positioned beneath the center of the motor 37, which provides a balance for the unit to sustain the unit in vertical position. The legs 31 are adjusted and secured in balanced position by means of placing notches 40 on the undersides of the pivotally swung braces 41 over headed pins 42 on legs 31 to regulate the distance the feet 33 are extended outwardly from the bottom of the pipe 1. A brace 41 (three in number) is provided for each leg 31 and each brace 41 is pivotally swung from pivot pins 43 inserted through holes 44 in said braces 41 and holes 45 in furcated lugs 46 (three in number) attached by weld to outer periphery of intake pipe 1 somewhat below the pivotal point of said legs 31 attached thereabove.

In the operation of the fluid pump by the attached motor 37 rotation is imparted by the motor to the propeller shaft 14 and propeller 25 attached to the bottom of said shaft. The propeller blades are shown in the drawings to be submerged in water fluid 47 and the pitch of the blades of the propeller 25 is such that the blades will when rotated lift and force the water upwards through the intake pipe 1 and thence out through the discharge pipe 3. Thus, water in a section of land bordered off by levees such as levee 48 having lower ground elevation may be pumped out of the lower section of ground bordered by levees to a higher section of ground bordered by levees to provide water irrigation for the higher section or sections of ground by manually lifting and placing the pump and motor unit in a lower section of ground inundated by water from the main source of supply thereto and pumping water therefrom to an adjacent higher section of ground bordered by levees. By placing the pump and motor unit in one bordered section of ground adjacent the levee separating a lower and higher section of ground water may be pumped from one to the other in a convenient, facile and inexpensive way to provide irrigation to hillside or sloping lands which have uneven and different ground elevations.

It is obvious that many changes may be made in details of construction and arrangement of the various parts without departing from the spirit and scope of the invention.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

1. In combination with a fluid pump and a motor mounted thereon for imparting rotation to rotatable elements of said pump, said pump having rotatable shaft with propeller attached thereto disposed within a vertical intake pipe including a discharge pipe attached to said

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intake pipe and in communication therewith, a plurality of stationary fins attached to the exterior surface of the outer vertical wall of said intake pipe and extending downwardly to the lower edge thereof and extending outwardly therefrom.

2. In combination with a fluid pump and a motor mounted thereon for imparting rotation to rotatable elements of said pump, said pump having rotatable shaft with propeller attached thereto disposed within a vertical intake pipe, a discharge pipe in communication with said intake pipe, a plurality of stationary fins attached to the exterior surface of the outer vertical wall of said intake pipe and extending outwardly therefrom, said intake pipe having a vertical opening at the bottom thereof of greater diameter than the propeller therein.

3. In combination with a fluid pump and a motor mounted thereon for imparting rotation to rotatable elements of said pump, said pump having rotatable shaft with propeller attached thereto disposed within a vertical intake pipe, a plurality of stationary fins attached to the exterior surface of the outer vertical wall of said intake pipe and extending outwardly therefrom, a vertical hole through said intake pipe of sufficient diameter to expose said propeller therein to a vertical propeller to permit the propeller therein to a vertical column of fluid within said intake pipe and of a greater diameter than said propeller to permit the propeller to have access to a column of fluid therebeneath within said intake pipe to allow said propeller to pick up a full load of fluid and produce a full head of fluid to be forced through said discharge pipe.

4. In combination with a fluid pump and a motor mounted thereon for imparting rotation to rotatable elements of said pump, said pump having rotatable shaft with propeller attached thereto disposed within a vertical intake pipe, a discharge pipe in communication with said intake pipe and said propeller, a plurality of supporting legs attached to said vertical intake pipe one of which legs extends outwardly from said intake pipe beneath said motor and oppositely disposed to said discharge pipe, a plurality of stationary fins attached to the exterior surface of the outer vertical wall of said intake pipe to break up the turbulence of said fluid entering said intake pipe picked up by said rotating propeller and extending outwardly therefrom, said fins terminating at the lower edge of said intake pipe to allow fluid to enter all around the lower edge of said intake pipe upon rotation of said propeller.

References Cited by the Examiner

UNITED STATES PATENTS

645,353	3/1900	Eisenhut	103—103
1,472,560	10/1923	Griffiths et al.	
1,700,405	1/1929	Guidi	103—89 X
1,767,535	6/1930	Lannert et al.	103—87
1,849,303	3/1932	Labaw	103—87 X
2,004,571	6/1935	Bothezat	230—117
2,744,465	5/1956	Springer	103—218 X
3,102,481	9/1963	Stoner et al.	103—95 X

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