

W. E. HUGHES.
CENTRIFUGAL PUMP.
APPLICATION FILED JUNE 21, 1911.

1,040,543.

Patented Oct. 8, 1912.

2 SHEETS—SHEET 2.

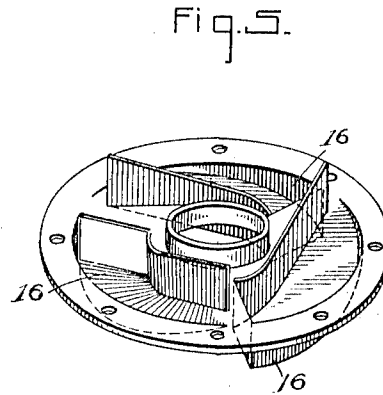
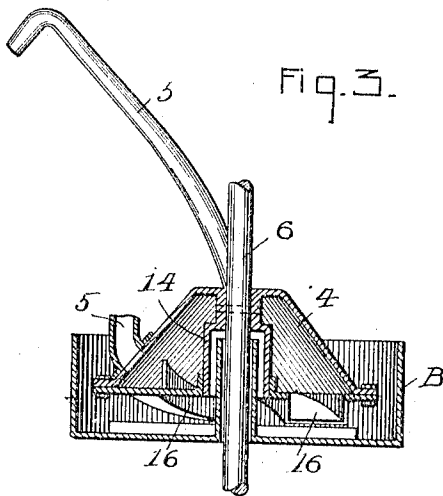
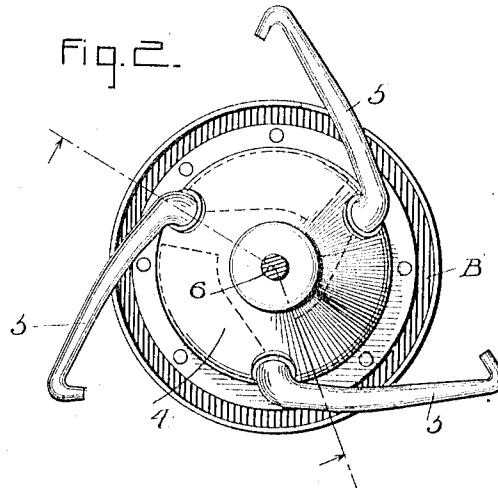
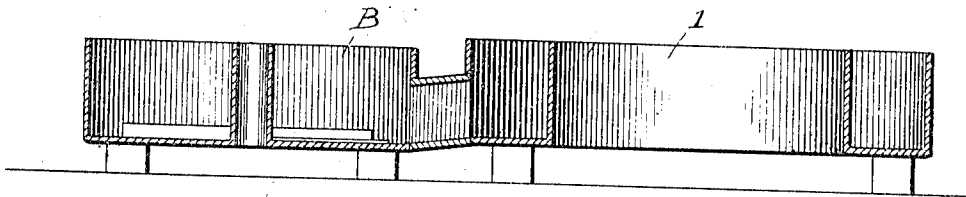


Fig. 4.



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CENTRIFUGAL PUMP.

1,040,543.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM E. HUGHES, a citizen of the United States, residing at Glenwood Springs, in county of Garfield and State of Colorado, have invented certain new and useful Improvements in Centrifugal Pumps, of which the following is a specification.

This invention relates to an improvement in centrifugal pumps, and the object is to provide means whereby water can be elevated from one receptacle to another and conducted to the desired point. For instance, it would be used in pumping water from a mine or well, or for elevating it to a tower for water systems.

The invention consists in certain novel features of construction and combinations of parts which will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation showing the invention; Fig. 2 is a plan view of one of the pumps; Fig. 3 is a vertical sectional view through one of the tanks and pumps; and Fig. 4 is a vertical sectional view through one of the troughs and tanks. Fig. 5 is a perspective view of the buckets.

A, B, and C are a series of tanks, and connected to the tanks B and C are annular troughs 1, 2 and 3. Mounted in each tank A, B, and C, is a rotary piston 4, which is preferably hollow, and connected thereto are a plurality of pipes 5, which extend upwardly for discharging the fluid into the troughs 1, 2 and 3. A shaft 6 passes through the trough 2 and tank B, and connected thereto are the pistons which are mounted in the tank B. A shaft 7 extends through the tanks C and A, and connected thereto are the pistons which are mounted in the tanks A and C. Sprocket wheels 8 and 9 are mounted on the shafts 6 and 7, respectively, and connecting the sprocket wheels is a chain 10, whereby the two shafts will be caused to rotate upon motion being transmitted to the driving shaft 11, which is provided with a gear wheel 12 which meshes with a gear wheel 13 on the shaft 6. Each

tank is provided with a tubular extension 14 which surrounds either the shaft 6 or 7 for forming a connection between the shaft and tank to prevent the water or fluid from passing from the tank around the shaft. The pistons 4 are provided with a plurality of stationary buckets 16, on the lower side thereof, which convey the water or fluid into the pistons upon the rotation of the pistons in the tank, whereby the water will be conducted through the pistons and pipes 5 to the various troughs, each piston conducting the water to the trough thereabove. The water is admitted to the main tank A by a pipe 17, from which it is conducted through the pistons 4, pipes 5, to the trough 1. The pipe 18 connects the trough 1 to the tank B, whereby the water from the trough 1 will be discharged into the tank B, and from there conveyed up to the next trough 2, when the water will be discharged from the trough 2 to the tank C by means of a pipe 19. Then the water will be conducted to the next trough 3, and thence through the pipe 20, from which it can be discharged or conducted to a higher elevation as desired. As many troughs and tanks as desired can be connected together, and I do not wish to be limited to any particular number.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a centrifugal pump, the combination with two series of tanks and troughs alternately arranged and means for conducting the liquid from the troughs to the tanks, of hollow rotary pistons mounted in the tanks, shafts upon which the pistons are mounted, means for driving the shafts, inclined buckets extending through the bottom of the pistons for scooping the water from the tanks into the pistons, and pipes connected to the pistons for conducting the water to the troughs.

2. In a centrifugal pump, the combination with two series of tanks and troughs alternately arranged, the tank of one series being connected to a trough of the other

series, whereby the water from the trough
will be conducted to the tank, of hollow ro-
tary pistons mounted in the tanks, means for
conducting the water from the tanks into
5 the hollow pistons, and pipes connected to
the hollow pistons for conducting the water
into the troughs.

In testimony whereof I affix my signature,
in the presence of two witnesses.

WILLIAM EDGAR HUGHES.

Witnesses:

BARTON HOPKINS,
OREN D. BUTTON.