E. P. HOLLY.

LIQUID IMPELLING DEVICE.

APPLICATION FILED JULY 5, 1912.

1,131,519. Patented Mar. 9, 1915.

Fig. 1.

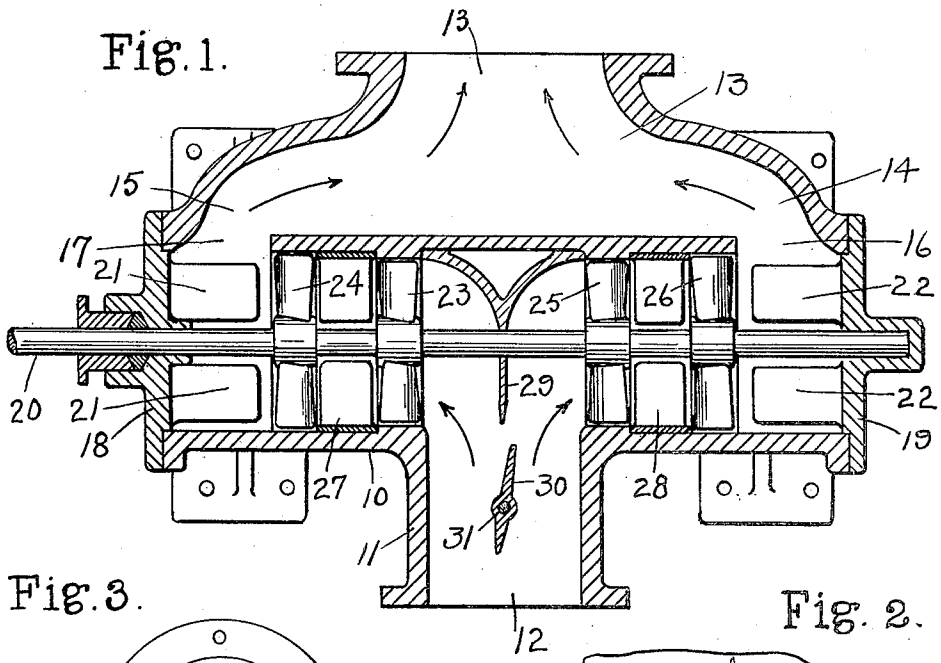


Fig. 3.

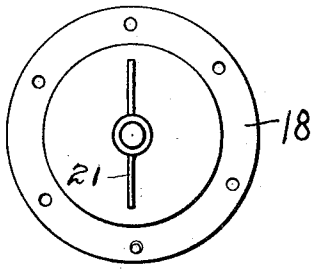


Fig. 2.

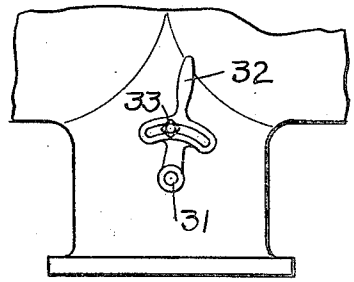


Fig. 4.

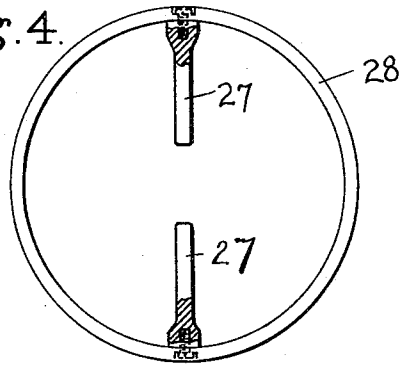
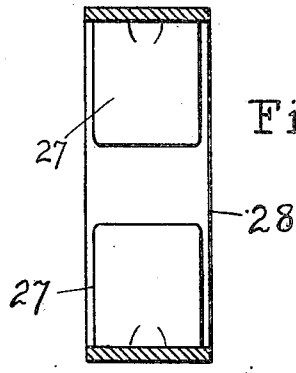


Fig. 5.



Witnesses

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDGAR P. HOLLY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HOLLY STEAM ENGINEERING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF RHODE ISLAND.

LIQUID-IMPELLING DEVICE.

1,131,519. Specification of Letters Patent. Patented Mar. 9, 1915.

Application filed July 5, 1912. Serial No. 707,748.

To all whom it may concern:

Be it known that I, EDGAR P. HOLLY, a citizen of the United States, and resident of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Liquid-Impelling Devices, of which the following is a specification.

This invention relates to liquid impelling devices, and has for its object to provide a device of this class with two sets of propellers mounted on and adapted to pull in opposite directions on a common shaft to balance the end thrust thereon, and to provide a partition between said sets to divide the inflowing stream and prevent the opposing propellers from pulling directly against each other on the stream.

A further object of the invention is to provide an adjustable deflecting blade in the inlet passageway for controlling the direction of the inflow so as to throw more or less of the liquid to either one of the sets of propellers so as to absolutely control the end thrust on the shaft. And a still further object is to provide one or more sets of guide plates between or adjacent to each set of propellers to control the direction of and prevent a whirling motion to the liquid which is naturally imparted thereto by the rotation of the driving propellers.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

Of the accompanying drawings: Figure 1— is a central sectional plan view through the casing of my improved impelling device. Fig. 2— is a plan view of the inlet passageway showing the lever by which the deflecting plate is adjusted and set in the desired position. Fig. 3— shows the end plate or cylinder head with guide plates mounted thereon. Fig. 4— is an enlarged end view of the ring which is mounted between the propellers supporting the guide plates thereon. Fig. 5— is a section of the ring showing the position of the guide plates mounted therein.

Referring to the drawings, my improved impelling device is composed essentially of a cylindrical casing 10 having a neck portion 11 forming a central inlet passageway 12. This casing is also provided on its opposite side with a common discharge chamber 13 having passageways 14 and 15 leading therefrom toward and communicating with the cylinder near its opposite ends through openings 16 and 17 respectively. The ends of the cylinder are provided with heads 18 and 19 each also forming bearings for a central longitudinally disposed driving shaft 20 mounted therein. Each of these heads are provided with a set of inwardly projecting guide plates 21 and 22 which prevent the fluid from the propellers, presently described, from taking on a whirling motion. By this construction of fixing the plates to the heads said plates are also removed each time the head is taken off, thereby permitting the propeller blades to be readily gotten at for inspection or repairs.

Mounted on the shaft 20 in the cylindrical casing 10 are two independent sets of propellers 23—24 and 25—26, each set being located between the inlet passage 12 and its respective outlet passageway 16—17, said propellers being arranged to pull in opposite directions on the shaft 20 for the purpose of balancing the end thrust thereon. Any desired number of propellers may be used in each set the propellers being graduated in size, growing larger toward the discharge opening. A set of guide plates 27 are connected to a ring 28 and located between the propellers to assist in guiding the fluid and prevent the same from whirling.

An essential feature of my improved invention is the provision of a dividing plate or partition 29 located between the two sets of propellers and extending from the inner wall of the cylinder outward into the inlet passageway 12, the same having its inner wall set on an easy curve from the center wall toward the opposite sets of propellers to facilitate the easy entrance of the fluid thereto. This partition also serves to prevent the different sets of propellers from pulling against each other on the inflowing stream rendering the device much more effective and efficient.

Another feature of my improved invention is the placing of a deflecting plate 30 in the inlet passageway and mounting the same on the transverse shaft 31, which shaft extends out through the wall of the passageway as illustrated in Fig. 3 and has an operating handle 32 connected thereto through which a bolt 33 passes for the pur-

pose of binding said handle in any desired position, whereby this deflecting blade may be set at any desired angle so as to throw more or less fluid to either set of propellers so that the desired balance or pull on the shaft may be readily obtained. In other words, this blade may be set at any angle to deflect the desired amount of fluid to either of the sets of propellers so that any unevenness in the pull of the different sets could be accurately regulated and adjusted by simply throwing more or less of the inflowing fluid to one side or the other.

I claim:

1. A fluid impelling device comprising a casing having a central inlet passageway, and a common discharge chamber having passageways leading therefrom toward and communicating with said casing on either side of said inlet, a driving shaft in said casing, two sets of propellers each located on opposite sides of and between said supply opening and said discharge passageways and arranged to pull in opposite directions on said shaft, a stream dividing partition between said sets of propellers, and an adjustable deflecting blade in said inlet passageway.

2. A fluid impelling device comprising a casing having a central inlet passageway, and a common discharge chamber having passageways leading therefrom toward and communicating with said casing near its ends, a driving shaft in said casing, two sets of propellers each located on opposite sides of and between said supply opening and said discharge passageways and arranged to pull in opposite directions on said shaft, a stream dividing partition between said sets of propellers, and a plurality of guide plates adjacent each set of propellers.

3. A fluid impelling device comprising a casing having a central inlet passageway and a common discharge chamber having passageways leading therefrom toward and communicating with said casing near its ends, a driving shaft in said casing, two sets of propellers each located on opposite sides of and between said supply opening and said discharge passageways and arranged to pull in opposite directions on said shaft, a stream dividing partition between said sets of propellers, an adjustable deflecting blade in said inlet passageway, and a plurality of guide plates adjacent each set of propellers.

4. A fluid impelling device comprising a casing having a central inlet passageway, discharge passageways on either side thereof, a driving shaft in said casing, two sets of propellers each located on opposite sides of and between said supply opening and said discharge passageways and arranged to pull in opposite directions on said shaft, a stream dividing partition between said sets of propellers, said casing having removable heads, and blades on said heads extending into said discharge passageways to prevent the fluid from whirling.

5. A fluid impelling device comprising a casing having a central inlet passageway, a common discharge chamber having passageways leading therefrom toward and communicating with said casing on either side of said inlet, a driving shaft in said casing, two sets of propellers each located on opposite sides of and between said supply opening and said discharge passageways and arranged to pull in opposite directions on said shaft, and an adjustable deflecting blade in said inlet passageway, said casing having removable heads, and blades on said heads extending into said discharge passageways to prevent the fluid from whirling.

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

EDGAR P. HOLLY.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."