K. M. STEWART.

PUMP.

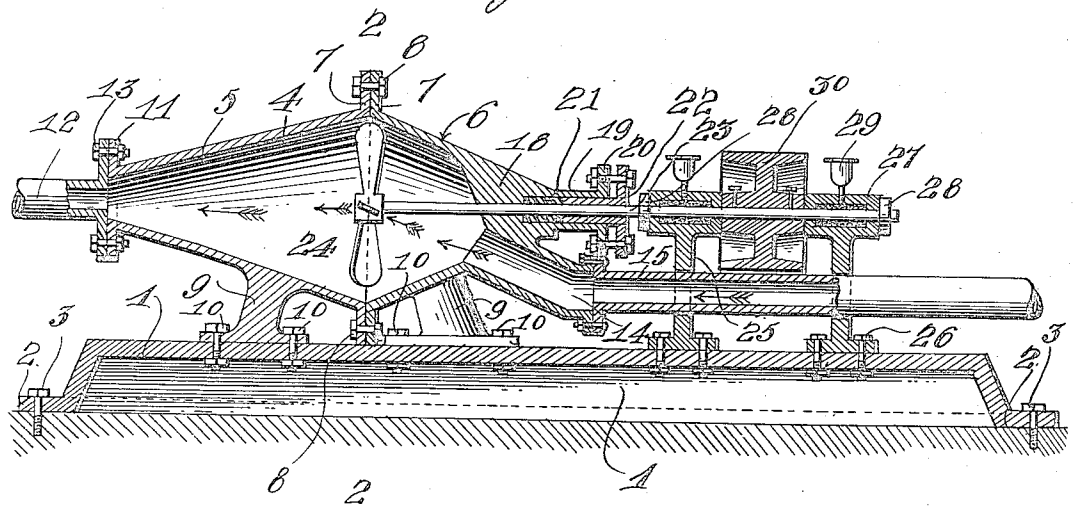
APPLICATION FILED AUG. 1, 1912.

1,067,690.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

Fig. 1.



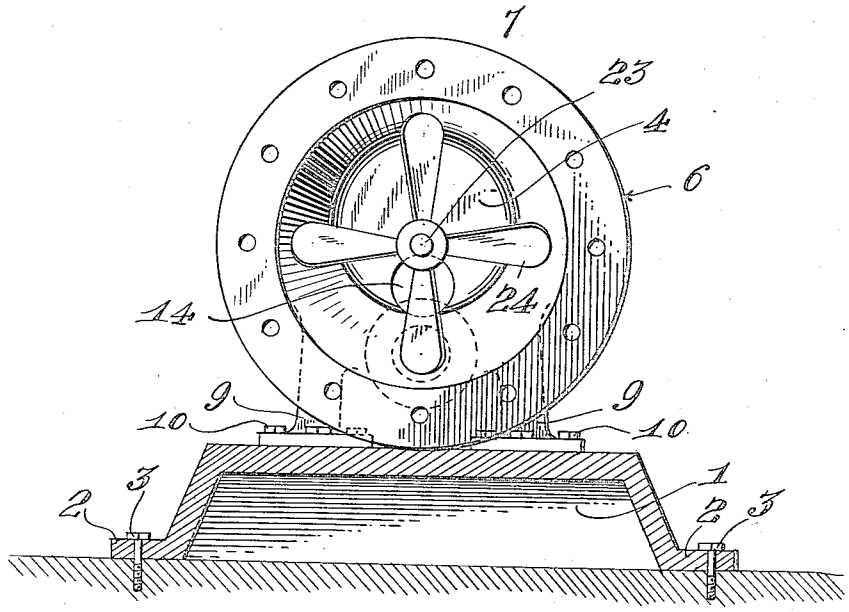


Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

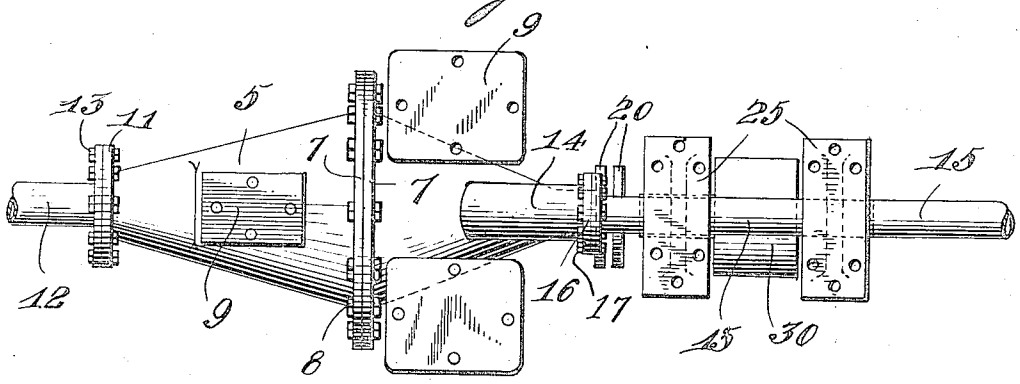
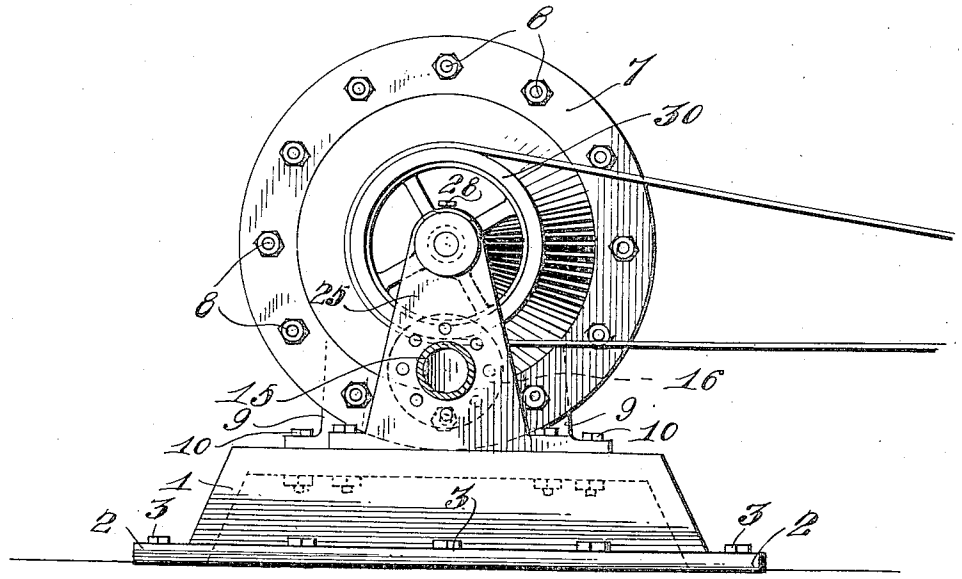


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

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PUMP.

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To all whom it may concern:

Be it known that I, KAY M. STEWART, citizen of the United States, residing at Sarasota, in the county of Manatee and State of Florida, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to turbine pumps, and has special reference to a pump for dredging purposes.

The principal object of this invention is the production of a pump which will efficiently operate and is formed of a minimum number of parts.

Another object of the invention is the production of an efficient pump which may be readily taken apart in order that access may be had to the interior of the pump.

With these and other objects in view, the invention consists in general of certain novel details of construction and combinations of parts as will be hereinafter fully described, illustrated in the accompanying drawings, and specifically claimed.

In the drawings, Figure 1 is a central longitudinal section of the pump. Fig. 2 is a section taken on line 2—2 of Fig. 1. Fig. 3 is a bottom plan view of the pump. Fig. 4 is a rear end view of the pump.

By referring to the drawings by numerals, it will be seen that 1 designates the base which is provided along its edge with a flange 2, which flange is secured to a support by means of bolts 3. The pump cylinder 4 comprises a primary section 5 and an auxiliary section 6, each section being provided with a circumferential flange 7 along their abutting ends. Bolts 8 pass through these flanges 7 for firmly securing the two sections of the cylinder 4 together. It will be seen that if it is desired to obtain access to the interior of the pump for cleaning the same or removing some obstruction which might be contained therein, the two sections may be separated by removing the bolts 8 from the flange 7. Each of the sections 5 and 6 of the body 4 is provided with a plurality of supporting feet 9, which feet are bolted to the base 1 by means of the bolts 10. The outer end of the primary section 5 of the cylinder 4 is provided with a flange 11, in which flange is secured the discharge pipe 12 by means of the bolts 13.

The auxiliary section 6 is provided with a downwardly inclined inlet tube 14, which tube is connected to the inlet pipe 15 by having their flared flanges 16 secured together by means of bolts 17. The auxiliary section 6 is provided with a thickened reinforcing portion 18 which terminates in a rearwardly extending neck 19 constituting a shaft supporting section. A flange 20 is formed upon the rear end of the neck 19 and to this flange is secured the packing member 21 of the air-tight packing 22 which fits tightly around the propeller shaft 23. The propeller shaft 23 carries at the forward end a propeller 24, which propeller is seated centrally of the cylinder 4 or in alinement with the joint of the primary and auxiliary sections to efficiently suck the material through the entrance neck or opening 14 and discharge the material through the discharge pipe 12.

A pair of spaced brackets 25 are bolted to the base 1 by means of the bolts 26, and these brackets carry journal boxes 27 at their upper ends for supporting the propeller driving shaft 23. Collars 28 are formed upon the shaft 23 and limit the longitudinal movement of the shaft 23 relative to the journals 27. Wheel cups 29 are carried by the journals 27 for lubricating the shaft 23. A driving pulley 30 is carried by the shaft 23 and over this driving pulley is adapted to pass a belt or driving pulley to impart rotary movement to the impeller 24. The inlet pipe 15 passes through the supporting brackets 25, as illustrated in Figs. 1 and 4, and these supporting brackets will constitute an efficient support for retaining the supply pipe 15 in its correct position.

From the foregoing description, it will be seen that by use of the present device the pump may be readily used for dredging purposes whereby sand and small gravel or the like will be allowed to pass through the pump without injuring the mechanism. As the material, such as sand or gravel, passes through the pump, the same will take the course as indicated by the arrows in Fig. 1, and the only obstruction within the pump is the driving propeller 24 which is formed of strong material and is so constructed as to operate without being retarded by the passage of sand or small stones, or other articles passing through the pump. When the pump is first started the same is filled with water and the propeller blade 24 is rotated so as to cause suction through the inlet neck 14

and by means of this suction the material will be drawn up toward the fan and pass through the fan and be discharged out through the discharge pipe 12.

From the foregoing description, it will be seen that an efficient and durable pump has been produced, the parts of which are very simple in construction and in view of this fact the pump may be readily taken apart so as to clean the same if so desired so as to remove any obstruction which might enter therein.

Having thus described the invention, what is claimed as new, is:—

A pump of the class described comprising an elongated body tapering toward each end, a discharge pipe secured to one end, a plurality of integral feet secured to said body and constituting a support therefor, a base supporting said feet, said body comprising a plurality of sections, each section provided with an annular flange upon its large end, means passing through said flanges for connecting the same together, said flange resting upon said base and constituting a reinforcement for the center of said body, one of said sections provided with a thickened bearing portion, an inlet pipe formed adjacent said thickened portion and extending downwardly and provided with an angularly extending outer end having an annular flange upon its edge, an inlet pipe connected thereto, a fan shaft positioned within said thickened portion of said body, a fan carried thereby and held within said body, in alinement with the junction of said sections thereof, a plurality of supporting brackets carried by said base and provided with web portions having centrally located apertures formed therein, said inlet pipe passing through said apertures and constituting a bracing means for said downwardly extending portion, a pipe carried by said body, bearings carried by the upper ends of said brackets, collars formed upon said fan shaft and positioned upon opposite ends of said bearings for preventing the longitudinal movement of said fan shaft relative to said body of said pump, a driving pulley keyed to said fan shaft and adapted to impart rotary movement thereto, and said brackets adapted to constitute an additional anchoring means for the body of said pump whereby said body and brackets will constitute a substantially one-piece structure.

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

KAY M. STEWART.

Witnesses:
CARY B. FISH,
I. R. BURNS.