(No Model.) 2 Sheets—Sheet 1.

M. P. SCHETZEL.

APPARATUS FOR THE PROPULSION AND TRANSMISSION OF WATER.

No. 482,655. Patented Sept. 13, 1892.

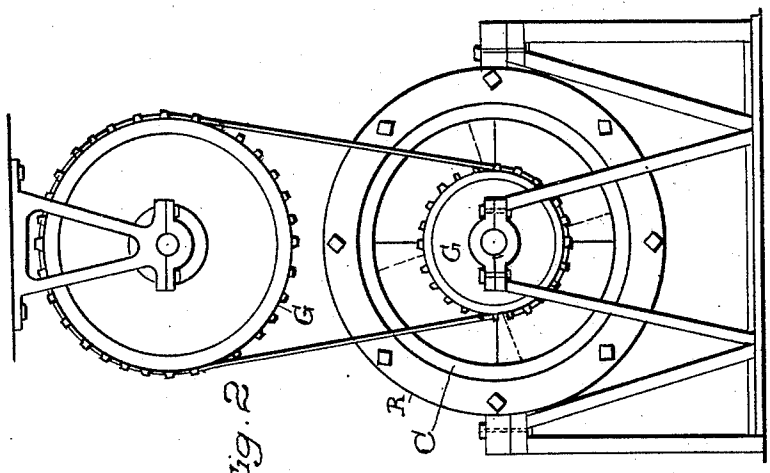

Fig. 2.

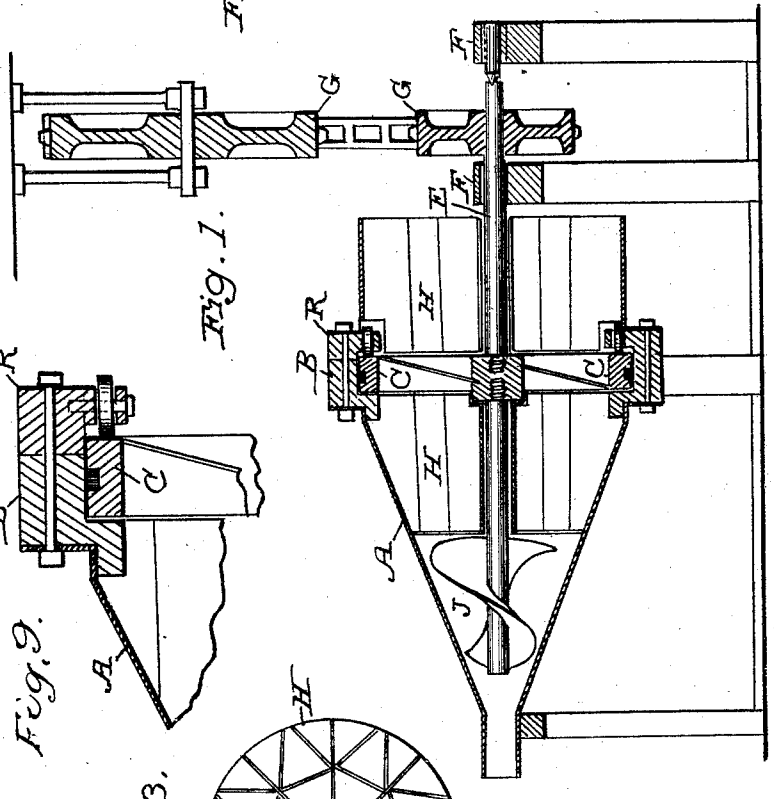

Fig. 1.

Fig. 9.

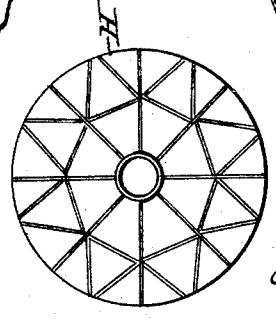

Fig. 3.

Witnesses,
R. F. Muse
J. A. Bayless

Inventor,
Mary P. Schetzel
By Dewey & Co.
Attys

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

(No Model.) 2 Sheets—Sheet 2.

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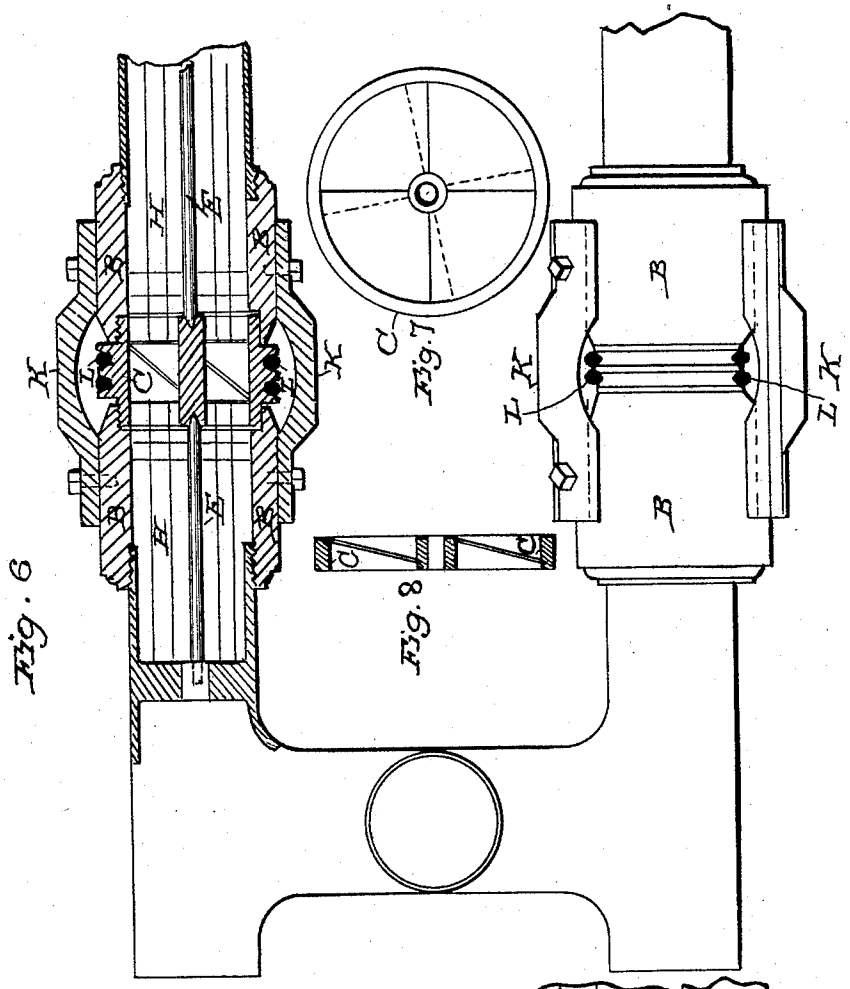

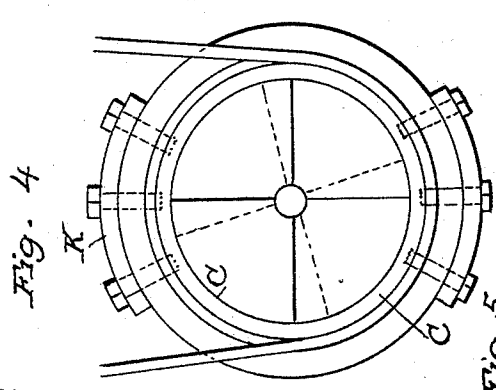

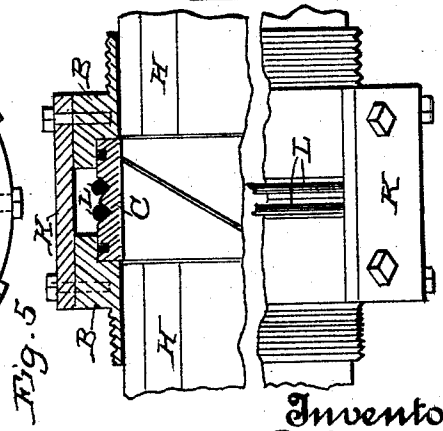

Witnesses,
J. A. Bayless

Inventor,
Mary P. Schetzel
By Dewey & Co
Atty

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

UNITED STATES PATENT OFFICE.

MARX P. SCHETZEL, OF SAN FRANCISCO, CALIFORNIA.

APPARATUS FOR THE PROPULSION AND TRANSMISSION OF WATER.

SPECIFICATION forming part of Letters Patent No. 482,655, dated September 13, 1892.

Application filed November 4, 1891. Serial No. 410,852. (No model.)

To all whom it may concern:

Be it known that I, MARX P. SCHETZEL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Apparatus for the Propulsion and Transmission of Water; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an apparatus for the propulsion and transmission of water; and it consists in certain details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical section of the apparatus with a view of the driving-pulleys. Fig. 2 is a front view. Fig. 3 is an end view of the web to prevent rotation of the water. Fig. 4 is a view of modification. Fig. 5 is a longitudinal view of the same, one half in section, the other half in elevation. Fig. 6 shows a modified form for a double method of propulsion. Fig. 7 is an elevation of the water-wheel C. Fig. 8 is a transverse vertical section of the same. Fig. 9 is an enlarged sectional detail showing the rings B and R and portions of the chamber and wheel or disk.

My invention is designed to be used for the propulsion and transmission of a body or column of water by means of a revolving disk having inclined or propeller-like overlapping blades, which blades extend over each other, and a chamber through which the water is either drawn by suction or pressed through by force.

My invention is used as a pump for raising, forcing, and transmitting water, and also for the purpose of propelling vessels.

A is a chamber, which in Fig. 1 is shown conical in shape, having the base or larger end secured to a ring B. This ring has a counterbored groove or channel in its inner face, and the wheel or disk C is fitted to revolve accurately in this counterbore. In order to admit the disk C into this counterbored channel, the ring R is removed from the ring B. This ring R is securely fastened to ring B by screws, and to overcome friction and at the same time to sustain the disk and keep it from bending by the pressure of the water friction-wheels are fixed in the ring R at certain intervals. A packing is employed to make a tight joint at outside periphery of the disk C. The wheel is mounted upon a shaft E, which is journaled in suitable boxes F, and to further lighten the friction and counteract the pressure of the water the shaft is pivoted on an adjustable step, and by means of sprocket-wheels or pulleys G G motion may be communicated to the shaft and to the disk. This disk has inclined overlapping blades set into it, extending radially from the hub to the periphery, and standing at such an angle that when the disk is rapidly rotated beneath the surface of the water the water will be forced or drawn by these blades into the interior of the chamber A, or if used as a suction-pump the water will be drawn into the chamber A first and then expelled from there by the rotating blades of the disk C. Under ordinary circumstances and conditions the rotary motion of the disk might be communicated to the water and the power of the apparatus be reduced, impeded, or entirely lost. In order to overcome and remove this objection, I make a web H of sheets of metal secured together, preferably forming irregular angular openings parallel with the axis of the chamber A, so that the water which is delivered or received by the propeller-disk C will pass through these openings with little or no obstructions on account of the thinness of the plates, and at the same time all tendency to a rotary motion of the water will be arrested on either side of the disk C, as the web H is put in front as well as in the rear of the disk C, and securely fastened and stationary to avoid movement, and the flow of the water will continue through the outlet in a regular current or stream. To still further assist in the action of the propeller-disk C, I have shown the shaft E extending into the body of the chamber A, nearly to the smaller or discharge end, and upon that portion of this shaft which projects beyond the guide-plates H, I have fixed a worm-screw or propeller-blade J, which, acting in conjunction with the propeller-disk, discharges the water through the open smaller end of the cone-shape chamber A.

In Fig. 6 I have shown two of the channeled rings B, in which the rim of the disk C is fitted to rotate, these two rings facing each other and being connected firmly together by segmental plates K, which are secured to the peripheries of the rings, extending part way around them. A groove, channel, or sprockets are made in the rim of the disk, around which a belt, chain, or cable L passes to transmit motion to it when this double or multiplied arrangement is used with chambers extending in each direction from the disk, all supplying water to one outlet or discharge pipe only, and all rotating in connection with each other. The operation in this case will be the same as previously described, with the exception that in place of the pulley upon the disk-shaft the power is transmitted directly to the periphery of the disk itself.

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

1. An apparatus for the propulsion and transmission of water, consisting of the combination of a conical-shaped casing having a ring at the larger end of the casing and having a counterbore groove or channel in its inner face, a circular disk having angularly-disposed overlapping plates or blades fixed within it, and means for rotating the disk, substantially as herein described.

2. An apparatus for the propulsion and transmission of water, consisting of a disk having angularly-disposed overlapping plates or blades fixed within it, a means by which said disk may be rotated, a ring or casing having a counterbore in which the periphery of the disk is fitted to rotate, antifrictional wheels in the ring to sustain the disk, an extension-chamber connected with the ring, through which the water is delivered from the propeller-disk, and a web formed of angularly-united plates fitted into said chamber A or on both sides of the disk C, forming passages through which the water is discharged, substantially as herein described.

3. An apparatus for the propulsion and transmission of water, consisting of the rim or disk with the radial angularly-disposed overlapping plates or blades, a means by which rotary motion is imparted to the propeller-disk, a ring or casing with a counterbore in which the periphery of the disk rotates, antifriction wheels against which the disk is supported, an extension-chamber from said ring having an interior web with openings formed of plates whereby the rotation of the water in the chamber A, as well as on the other side of the disk C, is prevented as it is received or delivered by the propeller-disk C, an extension of the propeller-shaft passing through said web into the chamber, and a worm-screw or propeller-blade secured to said extension, substantially as herein described.

In witness whereof I have hereunto set my hand.

MARX P. SCHETZEL.

Witnesses:
S. H. NOURSE,
J. A. BAYLESS.