S. P. Thayer.

Centrifugal Pump.

No. 95,749. Patented Oct. 12, 1869.

Fig. 1.

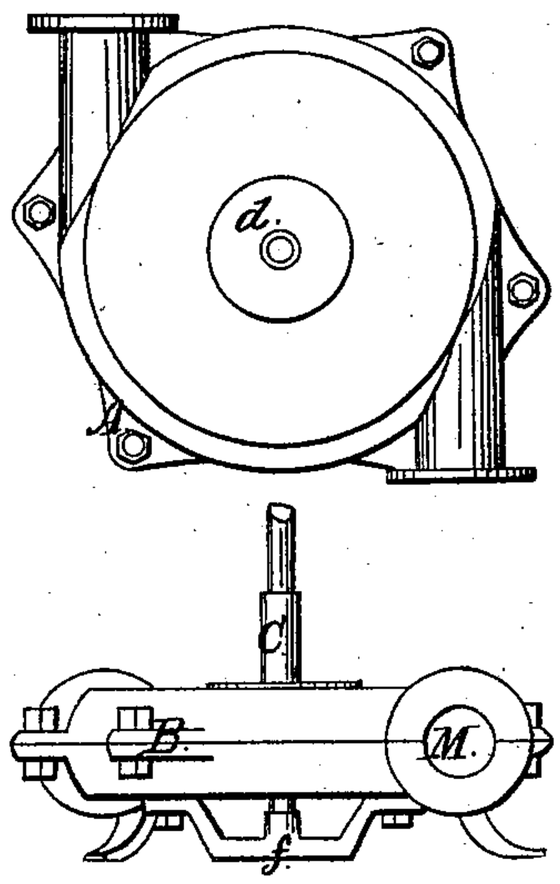


Fig. 2.

Fig. 3.

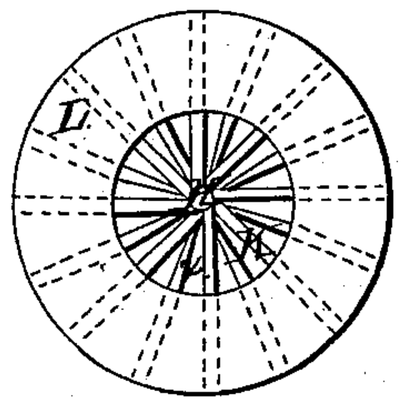
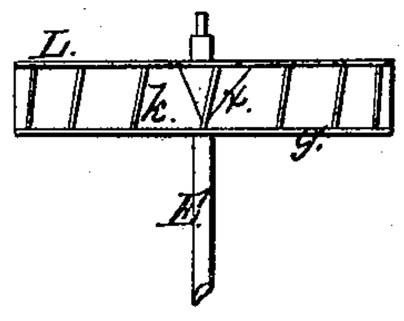


Fig. 4.



Witnesses.

Wm. M. Blanchamp

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STEPHEN P. THAYER, OF BALDWINSVILLE, NEW YORK.

Letters Patent No. 95,749, *dated October* 12, 1869.

IMPROVEMENT IN CENTRIFUGAL PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, STEPHEN P. THAYER, of Baldwinsville, in the county of Onondaga, and State of New York, have invented a new and useful Improvement on a Centrifugal Pump; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification.

Figure 1 is a top view of the pump-case.

Figure 2, a side elevation of the same.

Figure 3, a bottom view of the centrifugal wheel, which forces up the water.

Figure 4, a side view of the same.

Like letters designate corresponding parts in all of the figures.

The case is made of any suitable or usual form and construction, except that there are two tangential discharge-openings in opposite sides of the periphery, as shown in figs. 1 and 2, each formed, as usual, for the attachment of an elevating-pipe. The pipes may unite in one, or continue separately to the place or places of discharge.

There is a special advantage in the employment of two discharge-openings or outlets, applied to a tangential or peripheral-discharge centrifugal pump, beyond a mere duplication of parts, since the wings or buckets of the centrifugal wheel supply the water to the periphery faster than one eduction-opening can conduct it away, and by giving a freer vent to the water, as I do, I raise a larger percentage of water with a given power.

Another advantage of the double discharge is that the resistance of the water is balanced on the two sides, so that there is an even wear of the shaft-bearings; whereas, with the single discharge, the bearings wear much more rapidly on the side opposite to the discharge.

There might be three or four discharge-openings, but probably with little practical advantage, and with increased cost of construction. Hence I believe the double discharge to be best, all things considered.

The improved centrifugal wheel has wings K K, extending from the shaft or hub to the periphery, in radial, or nearly radial directions, and either straight or curved.

The essential feature of novelty consists in the inclined position of these wings forward, at the lower edge, or toward that face of the wheel through which the water enters.

This inclination is only essential at the inner ends, or in the portions opposite to the induction-opening in the face of the pump, and it may continue to the periphery, or not, as desired or most convenient in construction.

The object of this forward inclination of the wings is to draw the water into the pump thereby, without depending solely on its centrifugal action, so as to supply water positively to the wheel as fast as the outer portions of the wings drive it forward.

The degree of inclination may be about as represented in the drawings, or somewhat more will give a better effect.

With these wings thus inclined forward, a larger induction-opening can be made in the case without diminishing the centrifugal power of the pump, and thereby a freer admission of water is gained.

As all of the wings, extended into the hub or shaft of the wheel, occupy a considerable part of the central space of the wheel, I find it preferable to narrow a portion of them, say each alternate wing, inward from the outer circumference of the induction-opening of the case to the hub, as shown in fig. 3.

What I claim as my invention, and desire to secure by Letters Patent, is—

The peripheral-discharge centrifugal pump, having wings K K, inclined forward toward the induction-opening of the pump, substantially as and for the purpose herein specified.

Also, in combination with the centrifugal wheel, constructed as above described, the two tangential discharge-openings in the case, substantially as and for the purpose herein set forth.

STEPHEN P. THAYER.

Witnesses:

WM. M. BEAUCHAMP,

N. M. WHITE.