B. T. BABBITT.

Rotary Pumping Apparatus.

No. 220,108. Patented Sept. 30, 1879.

Fig. 1.

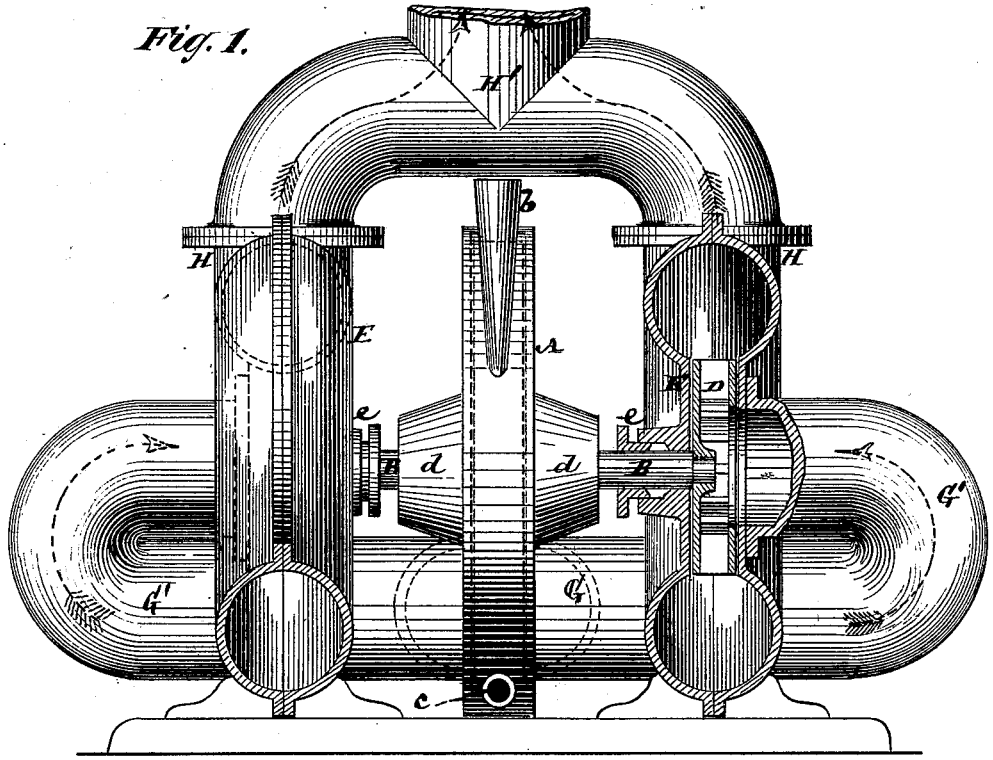
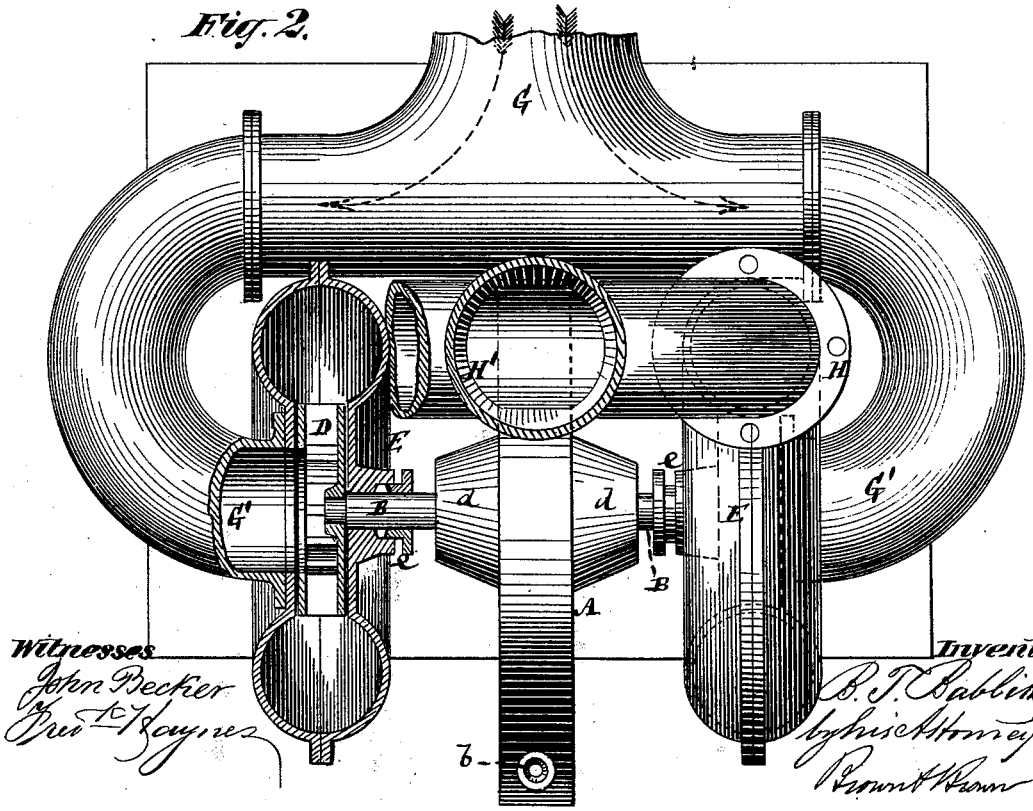


Fig. 2.



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IMPROVEMENT IN ROTARY PUMPING APPARATUS.

Specification forming part of Letters Patent No. **220,108**, dated September 30, 1879; application filed April 10, 1879.

To all whom it may concern:

Be it known that I, BENJAMIN T. BABBITT, of the city and State of New York, have invented a new and useful Improvement in Rotary Pumping Apparatus, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

This invention consists in a certain combination of rotary or centrifugal pumps, an intermediately-arranged rotary engine for driving said pumps, a single shaft common to both the engine and the pumps, and pipes terminating in one general pump-inlet and one general pump-outlet, the whole forming a very simple, compact, and efficient rotary pumping apparatus.

In the accompanying drawings, Figure 1 represents a partly-sectional elevation of an apparatus constructed in accordance with my invention, and Fig. 2 a partly-sectional plan of the same.

A is a rotary engine, which may consist of a simple bucket-wheel mounted on a horizontal shaft, B, and arranged within a close cylinder or case. Said wheel is or may be rotated by steam, compressed air, gas, or water introduced within the case to act upon the buckets of the wheel by a tangentially-arranged inlet, *b*, and, after having performed its duty, escaping by an outlet, *c*.

The shaft B of said engine is arranged to project through bearings *d* on reverse sides of the engine-case, and, passing through stuffing-boxes *e e*, carries on its opposite overhanging ends two centrifugal pumping-wheels, D D, arranged to work within circular cases or cylinders E E of a pair of centrifugal pumps. By this arrangement the pumping-wheels have a balancing action on the engine-shaft, and the bearings of the latter also form the bearings for the wheels, thus reducing friction and insuring an easy run of the engine and pumps.

The fluid or liquid to be pumped is introduced by a general inlet-pipe, G, which is of sufficiently large area to supply both pumps, and which connects, by branch pipes G′ G′, with the outer central portions of the pump cylinders or cases E E, and connected tangentially with said cylinders or cases outside of or beyond the circumferential travel of the pumping-wheels are branch outlet-pipes H H, for the pumped liquid, which outlet-pipes also terminate in or are connected with a general outlet-pipe, H′, of sufficiently large area to provide for the discharge of the liquid from both pumps.

This combination of parts or devices forms a very simple, compact, and efficient pumping apparatus, in which two rotary or centrifugal pumps having one general inlet and one general outlet are driven by a rotary engine intermediately-arranged between the pumps, and directly and intermediately applied to a single shaft which is common to both the engine and the pumps.

The invention is not restricted to any particular kind of rotary engine, nor to any particular construction of rotary pumps.

I claim—

The combination of two rotary or centrifugal pumps, an intermediately-arranged rotary engine for driving said pumps, a single shaft common to both said engine and said pumps, and pipes terminating in one general inlet and one general outlet for both pumps, the whole being arranged substantially as shown and described.

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