

G. SHONE.

ROTARY PUMP AND BLOWER.

No. 177,575.

Patented May 16, 1876.

FIG. 1.

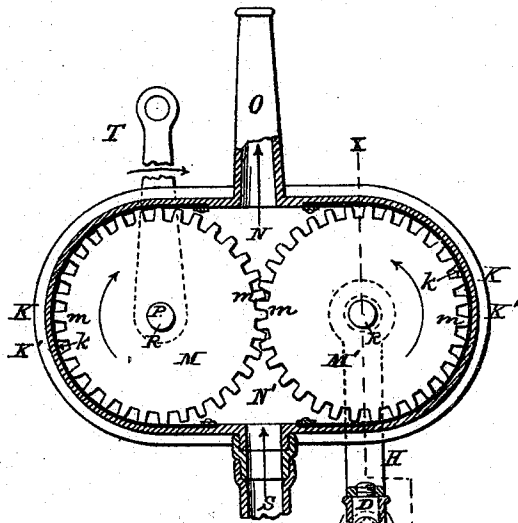
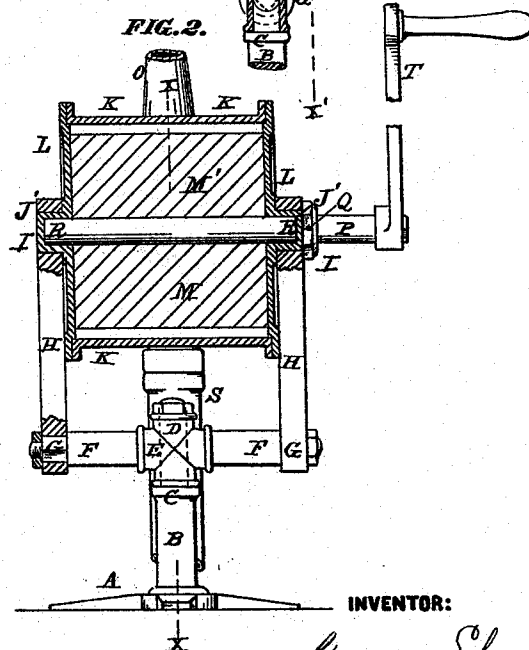


FIG. 2.



ATTEST:

Robt. Burns.
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UNITED STATES PATENT OFFICE.

GEORGE SHONE, OF EAST ST. LOUIS, ILLINOIS.

IMPROVEMENT IN ROTARY PUMPS AND BLOWERS.

Specification forming part of Letters Patent No. **177,575**, dated May 16, 1876; application filed June 7, 1875.

To all whom it may concern :

Be it known that I, GEORGE SHONE, of East St. Louis, St. Clair county, State of Illinois, have invented a certain new and useful Improvement in Rotary Pumps and Blowers, of which the following is a specification:

My improvement relates to a pump or blower having two pistons counterparts of each other, and rotating in a single cylinder or case.

In my improvement these pistons have longitudinal cogs the whole length, whose edges fit snugly the sides of the cylinder or case, and the cogs are of such a shape as to make a tight joint or contact between the teeth of the wheels or pistons as they rotate. The water is carried around in the spaces between the teeth and the ends of the cylinder or case, and is discharged at the opposite side to that at which it flows in.

My invention also applies to the stand upon which the cylinder or case is supported, and which allows universal motion in the case to direct a discharge-nozzle in any direction.

In the drawings, Figure 1 is a section at X X, Fig. 2. Fig. 2 is a section at X' X', Fig. 1.

A is the foot. B is the standard, having a collar, C. Above the collar C is an arbor, D, on which turns the head E. This head may consist of a cross-coupling, and has horizontal arms F ending in square ends G G, which pass through mortises in the upright arms H H. The upper ends of the arms H have bearings I for the gudgeons J of the cylinder or case K. These gudgeons are cast solid with the cylinder-heads L. The cylinder or case is made nearly twice as long as it is deep, so as to just receive the pistons M M'. These pistons are counterparts of each other, and at the inner side their cogs or teeth *m* fit so closely with one another that the water carried into the upper part or chamber, N, of the case (by the teeth in traveling upward at the semicircular sides of the case) cannot return to the chamber N', but is forced out of the nozzle O. The sides of the pistons fit the semicircular sides K' of the case, and the ends of

the pistons fit snugly the ends L of the case. P is the shaft, by which the piston M is driven, and this shaft passes through the boss J', and is provided with a stuffing-box, Q. The gudgeons R of the pistons have bearings in the cylinder-heads, the bearing-sockets extending into the gudgeons or bosses J J'. The piston M' is driven by the piston M through the medium of the cogs *m* upon their peripheries. In a hand-pump, as shown, the piston M is driven by a crank, T, upon the shaft P, but in a "power" pump or blower the shaft P would carry a pulley, cog-wheel, or friction-wheel. The case K in a power pump or blower would be a fixture, and its eduction-opening O might communicate with a discharge-pipe or flexible hose and nozzle. S is the supply hose or pipe of the pump. When used as a blower the supply-pipe S would be dispensed with. When used as a hand-pump the hose-coupling (at S) may be used as a handle to turn the case K on its bearings D I I to present the nozzle O in any desired direction.

The whole, or any part of the interior surface of the case K, may be lined with leather or any suitable fibrous material, *k*, to make a close packing with the teeth *m* and the ends of the pistons. As shown, the apparatus is portable, but it may, if desired, be made immovable by firmly attaching its foot A to the floor.

I claim as my invention—

1. The combination of the pump-case K, supporting-frame F G H, swivel-head E, arbor D, and supporting-base A B, substantially as set forth.

2. The combination of the cogged pistons M M', gudgeons R, bosses J', and bearings I, for supporting the case K and its contained piston M' on the standards H, in the manner explained, substantially as set forth.

GEORGE SHONE.

Witnesses:

SAML. KNIGHT,
ROBERT BURNS.