

E. B. THOMPSON.  
 ROTARY PUMP.  
 APPLICATION FILED JAN. 31, 1913.

1,150,079.

Patented Aug. 17, 1915.

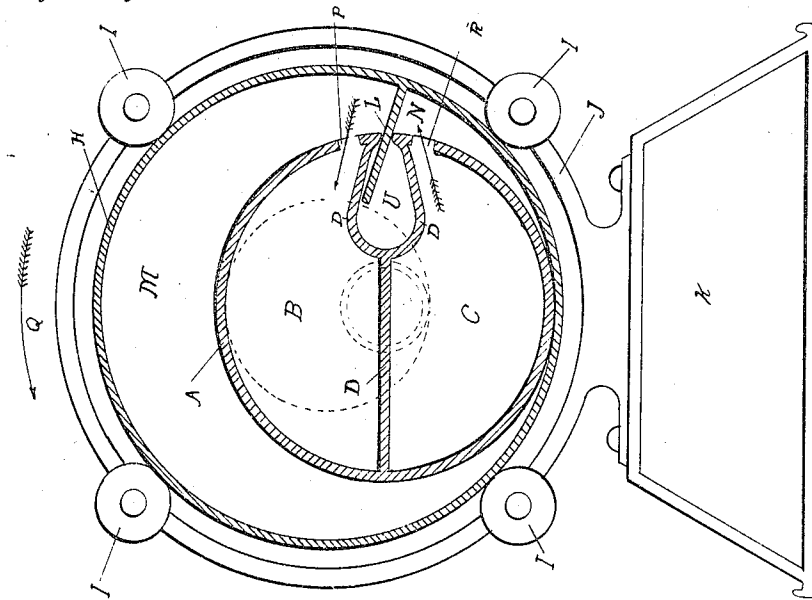


Fig 2

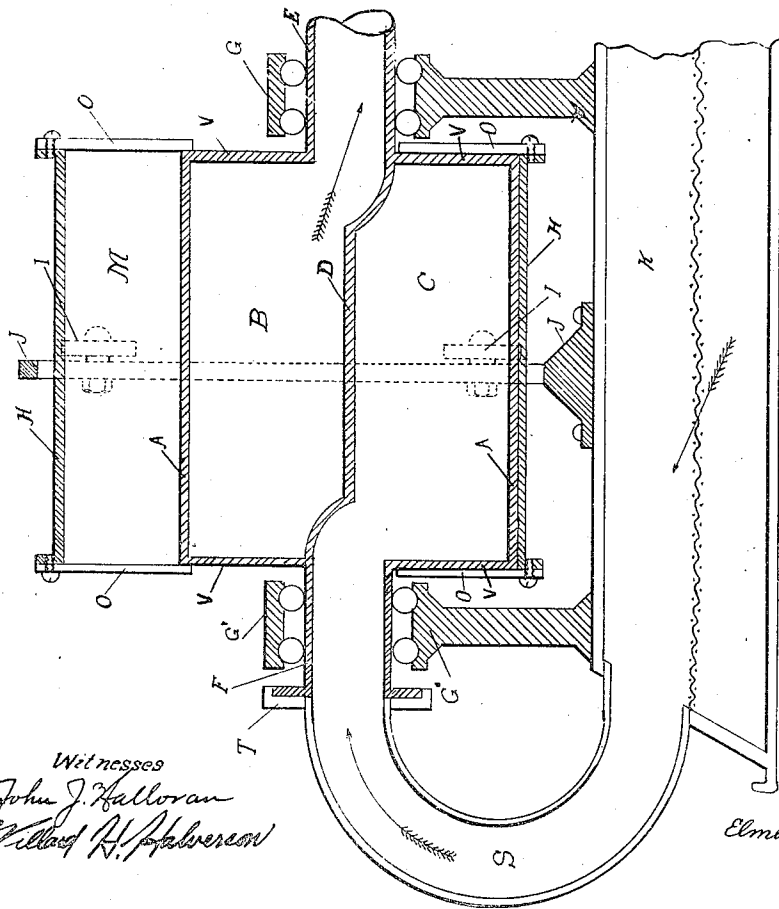


Fig 1

Witnesses  
 John J. Halloran  
 William H. Halverson

Inventor  
 Elmer B. Thompson

# UNITED STATES PATENT OFFICE.

ELMER B. THOMPSON, OF DES MOINES, IOWA.

## ROTARY PUMP.

1,150,079.

Specification of Letters Patent.

Patented Aug. 17, 1915.

Application filed January 31, 1913. Serial No. 745,508.

*To all whom it may concern:*

Be it known that I, ELMER B. THOMPSON, a citizen of the United States, residing in Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Rotary Pump, of which the following is a specification.

The object of my invention is to provide a rotary pump of simple, durable and inexpensive construction, which may be readily installed for use, and which is so constructed as to reduce the friction, noise and wear incident to rotary pumps hitherto used, adapting it to greater speed and power for suction or vacuum cleaning apparatus, and for gas and liquid pumping and compressing. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical, cross-sectional longitudinal view, and Fig. 2 is a cross-section taken at right angles with Fig. 1.

Similar letters refer to similar parts in both views.

The inner casing A is divided into two chambers B and C by the partition or wall D. The chamber B has an outlet into and through the hollow shaft E, upon which the inner casing is designed to rotate upon bearings G and G'. The inner chamber C has an intake from and through the hollow shaft F, which in turn rotates on bearings G' and G'.

The outer casing H rotates on guide wheels I, I, I and I, which are supported by bracket J, which is attached to the base K.

Attached to the outer casing and to the end plates O and O is a plate or shutter L, forming a partition between chambers M and N, and designed to oscillate in the chamber U. The outer casing H is inclosed on both ends by end plates O and O having circular holes through which the hollow shafts E and F extend outward from the end plates V and V inclosing the ends of the inner casing.

The shutter or plate L is rigidly attached to the outer casing H and to the end plates O and O, is designed to remain in a radial position and to oscillate in the chamber U when the casings are rotated. Chamber U is not connected with the chambers B and C.

The action of the pump is as follows: The two casings are both rotated in the same

direction, as indicated by arrow Q, thus decreasing the size of the chamber M and discharging its contents through port P, which in turn discharges chamber B through the hollow shaft E. Simultaneously with the decreasing of the chamber M the chamber N increases in capacity, which causes a suction through the port R from and out of the chamber C, which in turn causes a suction through the hollow shaft F. Shaft F is connected to pipe S by means of a packing joint T. The power to rotate the casings is applied to shaft E by means not shown in the drawing.

The advantages of my improved rotary pump are numerous.

The whole device may be made at a comparatively small expense, and may be cast out of iron or other metal in very few and simple parts. The size may be made suitable for a light weight portable vacuum suction cleaner, for heavier air pumps or water pumps, or for powerful, speedy pumps of great capacity for irrigation or drainage purposes. The action of the shutter in my rotary pump is positive and operates with very little friction. It is inexpensive and is easily detached and renewed or cleaned.

I claim as my invention:

1. In a device of the class described, a supporting frame, a plurality of rollers mounted thereon, a hollow cylinder mounted for rotation with its outer surface engaged by said rollers, a second cylinder of considerably smaller diameter mounted for eccentric rotation within the first cylinder, said second cylinder having formed within it a chamber, not in communication with the main part of its interior, a shutter secured to the inner wall of the first cylinder from end to end thereof, and extended into said chamber, and a partition dividing the main portion of the interior of the second cylinder into two compartments.

2. In a rotary pump, a hollow cylinder mounted for rotation, a second smaller cylinder mounted for rotation eccentrically within the first cylinder, and being of such length as to fit snugly within the ends of the first cylinder, a partition in said second cylinder dividing it into two compartments, a chamber in said second cylinder not in communication with said compartments, a

shutter secured to said first cylinder from  
end to end thereof and extending into said  
chamber, said second cylinder having at its  
ends laterally extending hollow shafts, com-  
5 municating with its respective compart-  
ments, bearings for said shafts, said com-  
partments each having a port for communi-

cation with the interior of the second cyl-  
inder.

Des Moines, Iowa, Jan. 20th, 1913.

ELMER B. THOMPSON.

Witnesses:

JOHN J. HALLORAN,

HENRY P. DALY.