

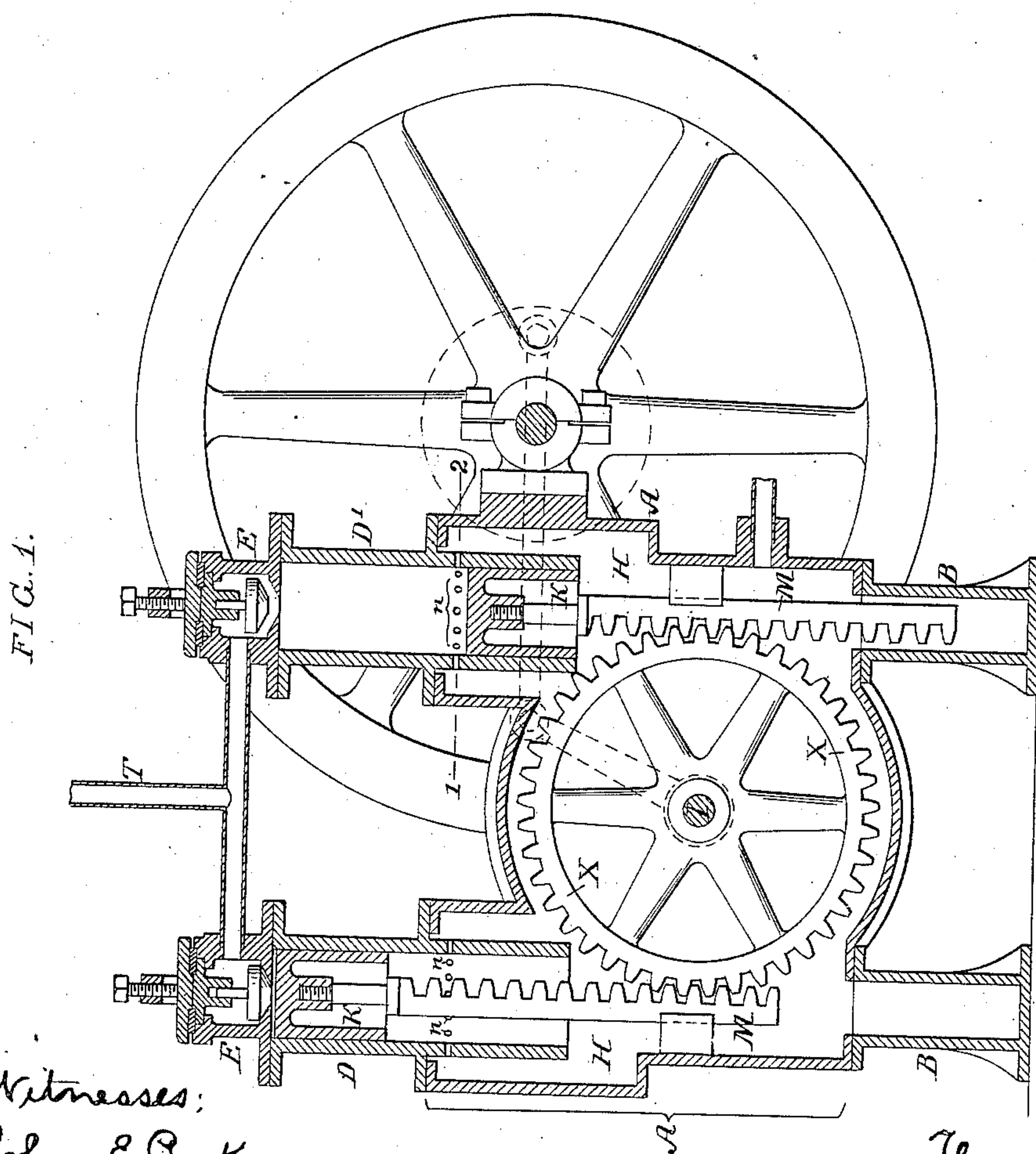
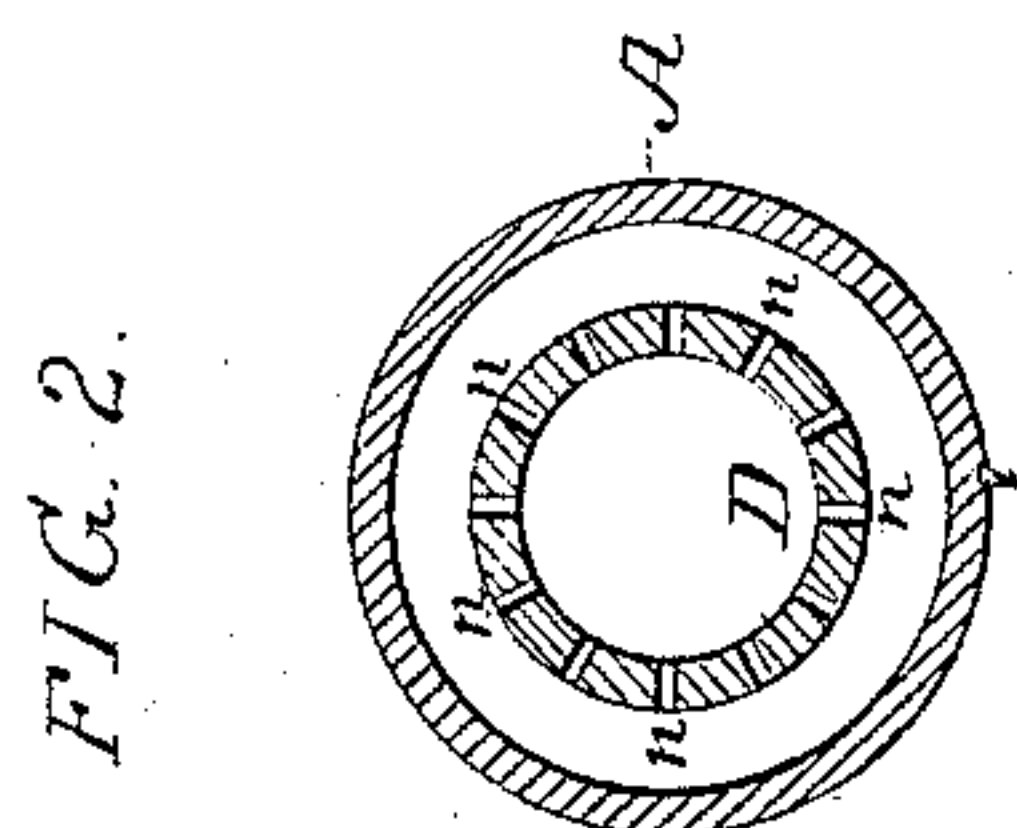
(No Model.)

T. ROSE.

PUMP.

No. 309,493.

Patented Dec. 16, 1884.



Witnesses:  
John E. Parker  
James F. Jobins

Inventor  
Thomas Rose  
by his Atty.  
Horton and Co.

# UNITED STATES PATENT OFFICE.

THOMAS ROSE, OF BROOKLYN, NEW YORK, ASSIGNOR TO DUDLEY S. STEELE  
AND NATHAN W. CONDICT, JR., OF JERSEY CITY, NEW JERSEY.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 309,493, dated December 16, 1884.

Application filed March 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS ROSE, a subject of the Queen of Great Britain and Ireland, and a resident of Brooklyn, New York, have  
5 invented certain Improvements in Pumps, of which the following is a specification.

My invention relates to an improvement, described and claimed hereinafter, in that class of pumps in which the fluid to be forced vol-  
10 untarily enters the barrel through openings in the same when the piston is at the limit of its inward movement; and the main object of my invention is to so construct a pump of this class that, while it can be used for pumping  
15 water and other liquids, it shall be especially applicable to the pumping of gas.

In the accompanying drawings, Figure 1 is a vertical section of a pump illustrating my invention, and Fig. 2 a sectional plan on the  
20 line 1 2, Fig. 1.

The pump has, in the present instance, two cylinders or barrels, D D', the lower portions of which project into an inlet-chamber, H, contained within a casing, A, which is supported  
25 by suitable legs, B B, and into which extends a shaft, I, carrying a cog-wheel, X, which gears into the guided racks M M, one secured to each piston K.

As regards the general structure of the pump,  
30 it forms no part of my invention; hence it will suffice to remark, therefore, that a vibrating motion is imparted to the shaft I, and consequently a reciprocating motion in contrary directions to the two racks M M and their pis-  
35 tons, the air, water, or gas admitted to the cylinder being forced through the valve-chests E and through the force-pipe T. There are a series of openings, n, in each barrel of the pump, and when the piston of each barrel is

at the limit of its inward movement these open- 40  
ings afford a direct communication between the inlet-chamber and the interior of the barrel. The pistons are without valves, and can be so operated that the terminus of the out-  
ward stroke of each piston shall be very near 45  
to the outer end of the barrel without being in absolute contact therewith. This is of especial advantage in pumping gas, as very little of the latter can remain in the barrel of the  
50 piston when it reaches the limit of its outward stroke.

I am aware that a pump-barrel has been made with lateral openings for the admission of water when the piston is at the limit of its  
inward stroke, as in Patent No. 181,144, Au- 55  
gust 15, 1876, but in this case the piston or bucket was perforated and provided with valves, an arrangement which would frustrate the main object of my invention.

I make no claims to the general structure of 60  
the pump, as it is similar to that described in the application of N. W. Condict, Serial No. 126,008, filed March 31, 1884.

I claim—

A pump in which the following elements are 65  
combined, namely: first, an inlet-chamber, H; second, a barrel having a series of lateral openings communicating with the said chamber; third, the valveless piston K; and, fourth, the  
70 discharge-valve, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub-  
scribing witnesses.

THOMAS ROSE.

Witnesses:

JOHN M. CLAYTON,  
HARRY SMITH.