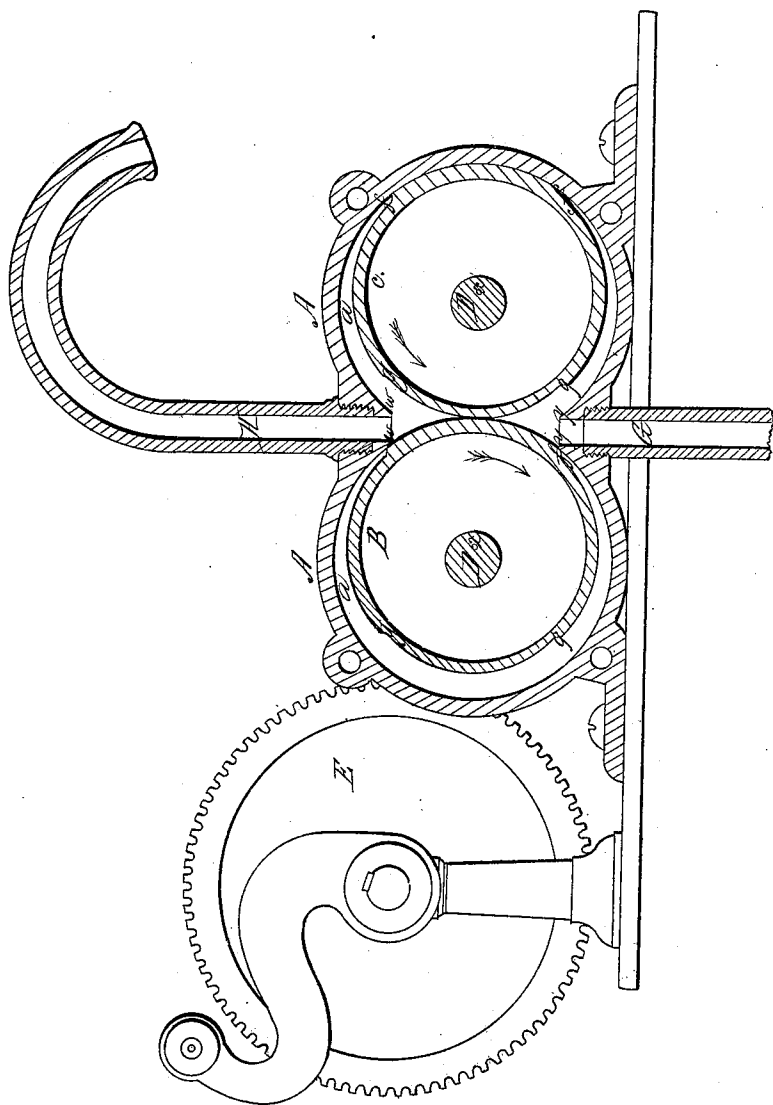


A. P. Holly,
Rotary Pump,

N^o 20,796.

Patented July 6, 1858.



UNITED STATES PATENT OFFICE.

A. P. HOLLY, OF SENECA FALLS, NEW YORK.

ROTARY PUMP.

Specification of Letters Patent No. 20,796, dated July 6, 1858.

To all whom it may concern:

Be it known that I, ALANSON P. HOLLY, of Seneca Falls, in the county of Seneca and State of New York, have invented a new and
5 Improved Rotary Pump; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, making part of this specification, and representing a trans-
10 verse vertical section of the pump.

A tight case A, is provided, having two cylindrical compartments *a, a*, communicating with each other by an open space in the middle. An induction pipe G, opens into
15 the middle of the case, from the bottom, directly beneath the communicating space between said compartments; and an eduction pipe H, leads upward through the top of the case, directly over said communicating
20 space. Within these compartments are placed respectively two cylinders B, C, formed and arranged as follows. They are provided with axes, (or journals,) D, D, which are situated concentrically with the
25 compartments of the case; but they are themselves situated eccentrically on their own axes, the eccentricity of each being equal to one half of the greatest width required between their surfaces and the sur-
30 faces of their inclosing compartments. The eccentricity, in the drawing, is marked by the distance between the center of each axis D, and the point marked "*x*," which is the center of each respective cylinder. The two
35 cylinders are arranged, in respect to each other, so that their lines of greatest eccentricity shall be in the same direction, or in parallel directions, and consequently so that the least eccentricity of the one shall be ad-
40 jacent to the greatest eccentricity of the other, and vice versa; and the diameter of each is equal to the distance between the centers of their axes, so that, consequently, they will be in contact with each other dur-
45 ing the entire revolution of each, when they are turned simultaneously and with equal velocity. They are thus turned, with equal velocity and in opposite directions, as re-
50 quired, by means of two cog-wheels, or pinions, of equal size, placed respectively on the ends of their axes, which project outside of the case A, and matching into each other. A driving wheel E, matching into one of said pinions, may communicate the
55 required motion to the cylinders from any suitable power. The directions in which the

cylinders turn, are indicated by arrows in the drawing. Thus the periphery of each cylinder, in the direction of its greatest eccentricity, will reach the periphery of its
60 compartment *a*, as it revolves, and thereby act as a piston, in forcing upward the water which fills the open space between the other parts of its periphery and the case, the two
65 cylinders acting alternately, while the water is prevented from returning between the cylinders, because they continually remain in contact, or nearly so. The ends of the cylinders, of course, reach and fit to the ends
70 of the respective compartments of the case.

If the cylinders B, C, were of perfectly cylindrical form, when arranged and acting as above described, since their peripheries reach to the peripheries of the case compartments, only tangentially, in the direc-
75 tion of their greatest eccentricity, there would be some escape of water, at the points *w, w*, and *y, y*, where the compartments *a, a*, terminate in the intercommunicating space. To obviate this, I make a portion of the pe-
80 riphery of each cylinder, between the points *f, f*, equally on each side of the tangent line of greatest eccentricity, and sufficient, in extent to reach from the respective points *w, w*,
85 to the corresponding points *y, y*, of the case, concentric with the respective compartment *a*, so as to reach the periphery of said compartment, as represented. And since this
90 portion of each cylinder is raised above the general surface thereof, a corresponding depression *g, g*, is made in the opposite side of each cylinder, to fit said raised portion. With this form of periphery, the eccentric
95 cylinders perform the functions of pistons in the most perfect manner, so that no valve, nor other additional mechanical arrangement, of any kind, is required, to complete
100 the perfect action of the pump. Thus a rotary pump of the utmost simplicity, cheapness, efficiency and durability, is produced.

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

A rotary pump provided with eccentric cylinders B, C, having concentric portions
105 *f f, f f*, and corresponding depressions *g g, g g*, and operating within the compartments *a, a*, of the case substantially in the manner herein specified.

ALANSON P. HOLLY.

Witnesses:

BENSON OWEN,
PETER VAN ZANDT.