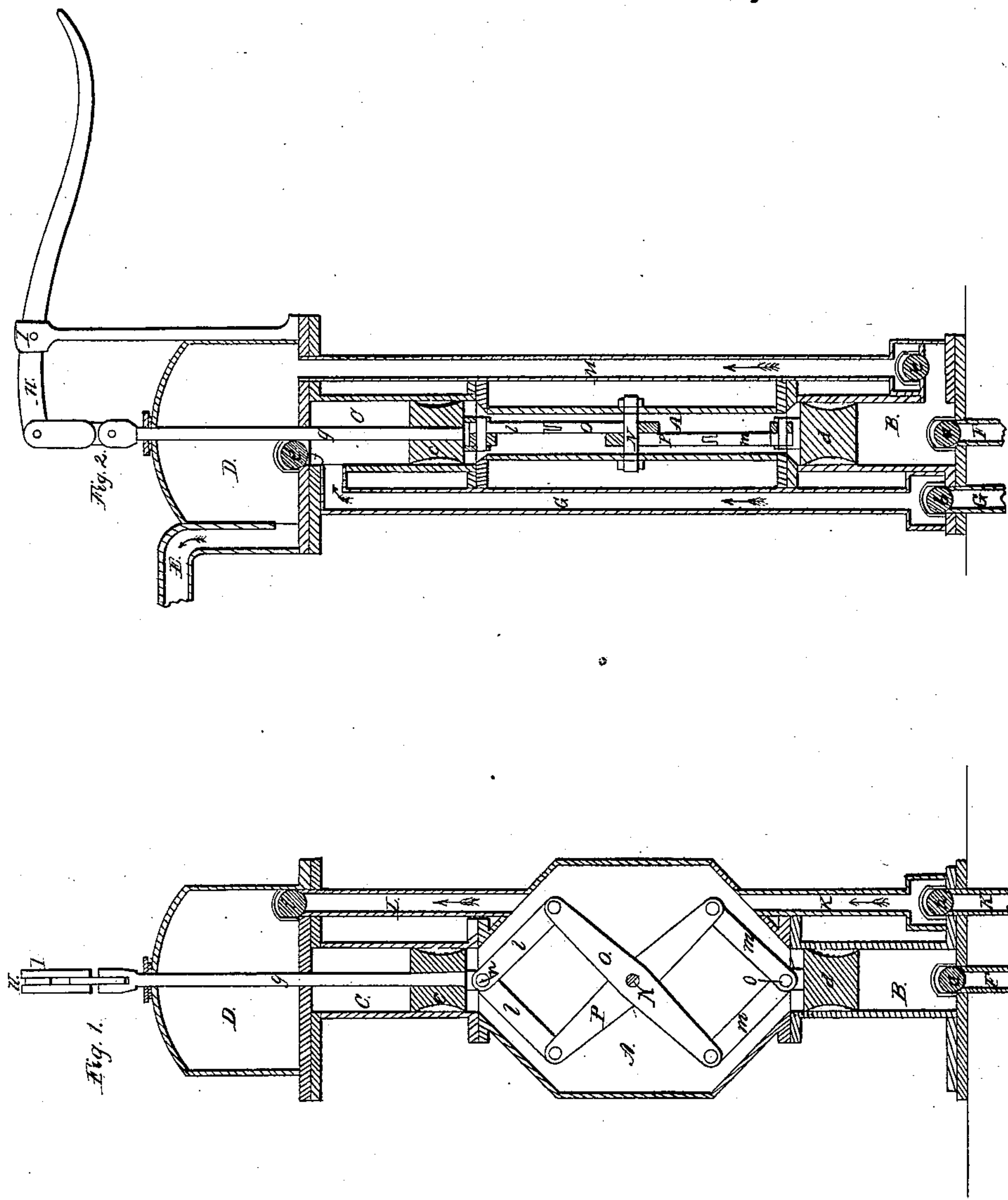


T. J. De Yampert,
Double-Acting Pump.

N^o 13,559.

Patented, Sept. 11, 1855.



UNITED STATES PATENT OFFICE.

THOS. J. DE YAMPERT, OF MOBILE, ALABAMA.

DOUBLE-ACTING FORCE-PUMP.

Specification of Letters Patent No. 13,559, dated September 11, 1855.

To all whom it may concern:

Be it known that I, THOMAS J. DE YAMPERT, of the city and county of Mobile and State of Alabama, have invented certain
5 new and useful Improvements in Double-Action Force-Pumps; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of
10 this specification, in which—

Figure 1 represents a vertical section in the line 1, 2 and Fig. 2 a vertical section in the line 3, 4.

The letters of reference indicate the same
15 parts in the different figures.

The nature of my invention consists in constructing and arranging the various parts of a double action force pump as hereinafter fully described by which means I
20 am enabled to increase the effect of the pump without increasing the length of the stroke or area of the plungers.

The following is a description of the construction and operation of my improvement.

25 A, is a water tight chamber of the shape represented in the drawing, or of any other convenient form. It communicates with a vertical cylinder (B) placed below it, and with another of the same dimensions above
30 (C). The axes of B and C are in the same vertical plane. Above the cylinder C is an air chamber or receiver D, from which proceeds the ejection pipe E. The cylinder B, is secured to a suitable platform and com-
35 municates with a reservoir or other source of supply by means of an induction pipe F, furnished with a valve (a). An induction pipe (G) having a valve (b) leads from the reservoir to the upper part of the cylinder
40 C.—Each cylinder is furnished with a solid plunger (c, and d). C has a piston rod (g) attached, which passes upward through the bottom of the air chamber D, and through a stuffing box in the top of the same, where
45 it is pivoted to the end of the lever or brake H which has its fulcrum at I. There is an opening (f) between the cylinder C, and receiver D closed by a valve (e). The chamber A, has an induction pipe K, communicating with the reservoir, and closed
50 by the valve h, and an ejection pipe (L) closed by a valve (i). The cylinder B, has also an ejection pipe (M) leading to the

receiver D, and furnished with a valve k. A pivot (N) passing transversely through the
55 center of the chamber A, serves as the common fulcrum for the crossed levers O and P. To the extremities of these levers are jointed four connecting rods l, l, and m, m one pair of these rods l, l, is pivoted to the
60 under side of the plunger c, at n, and the other m, m, to the upper side of the plunger d, at o.

The pump constructed, and arranged as above and in the position shown in Fig. 1,
65 the chamber, cylinders and pipes filled with water is put in operation by depressing the outer end of the lever H. This elevates the plunger c, which by drawing on the rods l, l, brings the upper, and lower extremities of
70 the levers O, and P, toward each other, causing the connecting rods m, m, to force the plunger d downward, thus forcing the contents of the cylinders into the receiver D, through their respective ejection pas-
75 sages before described. In the mean time the above motion of the plungers creates a partial vacuum in the chamber A, which is filled by water from the reservoir, through the induction pipe K. Upon elevating the
80 lever H the two plungers again approach each other forcing the contents of the cylinders into the chamber A, and thence through the pipe L into the receiver D, the two cylinders B and C being at the same
85 time filled by means of their respective induction pipes.

The water which passes into the receiver D is ejected through the pipe E when the pump is in operation, the elasticity of the
90 air in the upper part thereof causing the water to issue in a steady and unbroken stream in the usual manner.

This pump possesses great power and steadiness of action combined with facility
95 of operation.

By my peculiar arrangement as shown in the present instance, I can, with a stroke of one inch, produce an effect equal to that produced by a stroke of four inches in a
100 common pump with a plunger of the same area; while this proportion can be increased (within convenient limits) by adding more cylinders radiating from the center of the chamber A, and connected with the crossed
105 levers by suitable connecting rods.

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

The system of crossed levers, and connecting rods herein described, when placed and
5 operated in the intermediate or central chamber A, and when combined with two or more pistons, working in cylinders which

radiate from the central axis or fulcrum of said levers, substantially in the manner, and for the purposes herein set forth.

THOS. J. DE YAMPERT.

Witnesses:

CHAS. EVERETT,
S. W. FORREST.