

C.B. Gill,

Pump Piston,

No 67,291,

Patented July 30, 1867.

Fig. 1.

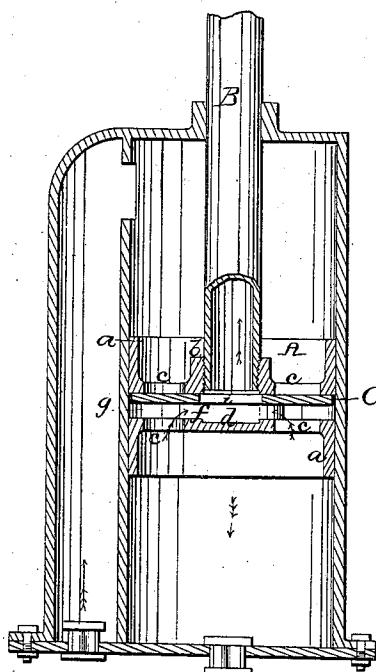


Fig. 2.

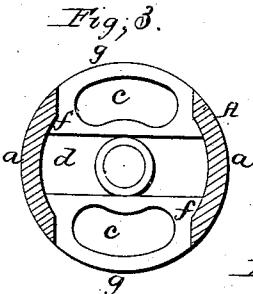
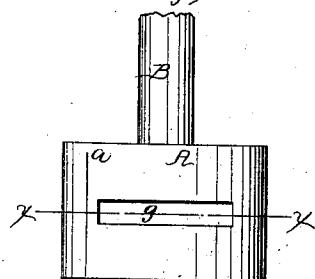
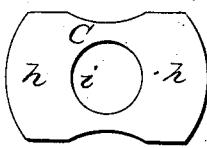


Fig. 4.



Witnesses,

Charles S. Spurr

Jay Heyard

Inventor,

C. B. Gill  
By J. Fraser & Co  
Attest.

# United States Patent Office.

C. B. GILL, OF ROCHESTER, NEW YORK.

Letters Patent No. 67,291, dated July 30, 1867.

## IMPROVEMENT IN PISTONS FOR DOUBLE-ACTING PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, C. B. GILL, of Rochester, in the county of Monroe, and State of New York, have invented a certain new and useful Improvement in Pistons for Double-Acting Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of my improved piston situate in a pump-barrel.

Figure 2, an elevation of the piston.

Figure 3, a horizontal section in line *z z*.

Figure 4, a plan of the valve detached.

Like letters of reference indicate corresponding parts in all the figures.

My improvement belongs to that class of double-acting pumps in which the water enters alternately through ports at the top and bottom of the piston, and passes up through the hollow piston-rod.

The invention consists in two packing seats or webs in the centre, situated at a suitable distance apart for the play of the valve, with a passage through the piston from side to side for the insertion of the valve.

The object desired is to produce an effective piston which is made very cheaply and requires but little fitting, and that only on the outside.

As represented in the drawings, A is the piston, and B the hollow rod which is screwed therein. The piston is composed of a cylindrical rim, *a*, and two central horizontal webs or seats, *b b*, situated at suitable distance apart to allow the necessary play of valve C between them, as the water enters alternately at top and bottom through ports *c c*. The central portions of the webs or seats are cast with depressions *d d*, thus leaving only the outer portions *f f* around the ports to serve as the bearings for the valve. The piston is cast with a passage extending through from side to side, of a size corresponding with the space between the webs *b b*, and of a width sufficient to allow the insertion of the valve therein from the outside. The valve is simply a plain leaf, as shown in fig. 4, having bearing surfaces *h h* to shut against the ports, and a central opening, *i*, to allow the passage of the water into the elevating tube in the down stroke of the piston. The length of the valve is a trifle less than the diameter of the piston, so that it will play up and down freely without binding against the sides of the pump-barrel.

A great advantage results from the extreme simplicity of this piston and valve. The piston is cast in a single piece, and no fitting is required except on the outside, unless it be to insert a flat file through the passage *g*, and give a few strokes to clean off the sand. And even if this is required the labor is very slight, since the dressing comes only upon the plain surfaces *f f* around the ports. The surfaces of the valve are smoothed with equal facility, since it is all plain work. This avoiding of the great labor of fitting and dressing the piston reduces the cost to the minimum, while it is as effective as the most costly. In all other pistons of the class with which I am acquainted, fitting is required inside as well as out. The passage *g* allows the insertion and removal of the valve at any time. I am aware of no other piston in which the valve can be inserted without removing the top or bottom of the piston itself. The close fitting of the piston within the pump-barrel prevents any loss of water through the slats. If desired, two valves in place of one may be employed, operating on opposite sides of the centre. This would obviate any difficulty arising from irregularity or incline in the webs *b b*. I am aware that a hollow piston has before been known, in which a disk-valve plays up and down to alternately cover and uncover the ports, but in such case the piston not only has to be made in two parts secured together by bolts, but has to be reamed or fitted inside. Such I do not claim.

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

The piston A, having the passage *g* and webs *b b*, arranged as described, and operating in the manner herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

C. B. GILL.

Witnesses:

R. F. OSGOOD,  
JAY HYATT.