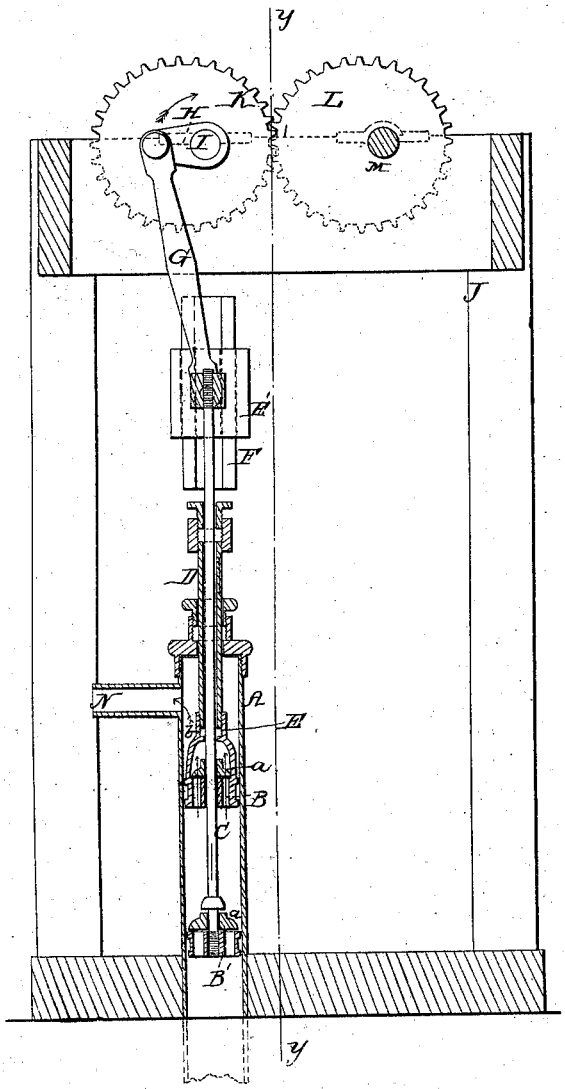
N. Sutton,

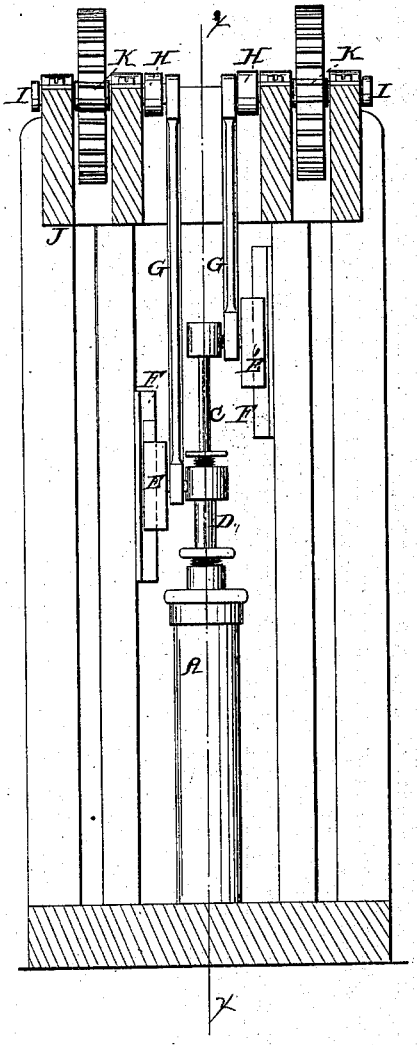
Pump Lever.

No. 47,344. Patented Apr. 18, 1865.

Fig; 1.



Fig; 2.



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UNITED STATES PATENT OFFICE.

N. SUTTON, OF DETROIT, MICHIGAN.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **47,341**, dated April 18, 1865; antedated April 3, 1865.

To all whom it may concern:

Be it known that I, N. SUTTON, of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a vertical section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

This invention relates to a new and improved pump of that class which are provided with two buckets or pistons working in one and the same cylinder.

The invention is more especially designed for operating in artesian wells, particularly in salt wells; and it consists in a novel means employed for operating the buckets or pistons, whereby there is not, while the pump is in operation, any cessation of a rising movement of a bucket or piston in the cylinder, and a constant stream is consequently discharged from the pump.

The invention also consists in placing a stuffing-box in the upper bucket or piston, in order to prevent leakage of air or water between the two piston-rods, one being solid and the other tubular, and the former working through the latter.

A represents the pump-cylinder, which may be constructed of any suitable dimensions, and B B′ are two buckets or pistons, which are fitted and work within the cylinder A, each being provided with a valve, *a*, opening upward. The buckets or pistons B B′ work one above the other, and the rod C of the lower piston, B′, is solid, and works through the rod D, of the upper piston, B, the former being tubular, as shown clearly in Fig. 1.

In the upper part of the upper piston, B, there is a stuffing-box, E, which is formed by having the lower end of the tubular rod D screwed into a chamber or cavity, *b*, through which the piston-rod C passes. This stuffing-box, however, may be modified or differently arranged. I do not confine myself to the above construction.

The upper ends of the piston-rods C D are attached to slides E′ E′, which work on guides F F, and the slides E′ E′ are connected by pitman G G to cranks H H at the inner ends of shafts I I, placed on the upper part of a framing, J, to which the guides F are attached.

On each shaft I there is keyed an eccentric toothed wheel, K, the wheels of the two shafts having a reverse position relatively with each other, and the crank H of each shaft being in line with the greatest or longest radius of the wheel K upon it. (See Fig. 1.)

L L are two eccentric wheels, precisely like K K. These wheels L L are keyed in reverse positions on a shaft, M, on the framing J, and they gear into the wheels K K, the two wheels, K L, of each pair having a reverse position relatively with each other in regard to their position on their respective shafts I M, as shown clearly in Fig. 1, and the two pairs of wheels K L have reverse positions relatively with each other.

From the above description it will be seen that a variable motion will be given the pistons B B′, the pistons descending in the cylinder A more rapidly than they ascend, so that one bucket will always be rising, each bucket as it reaches its lowest point commencing to ascend before the other commences to descend. Hence a continuous stream is discharged through the nozzle or spout N of the pump.

The stuffing-box E is important, as it prevents the leakage of air and water into the tubular piston-rod D and insures a perfect operation of the pump.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination and arrangement of the eccentric gearing with the piston-rods C D, substantially as and for the purpose specified.

2. The stuffing-box E, when applied to the upper bucket or piston, B, and used in combination with the solid tubular piston-rods C D, substantially as and for the purpose set forth

N. SUTTON.

Witnesses:

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